University of Alberta

Administrative Behavior in Two Cases of Unexpected Children's Deaths

by

Anita Paras

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Abstract

The purpose of this study was to describe and compare events and processes by which unexpected infant deaths at two major hospitals became the subject of government initiated reviews. The comparative case study was designed as a retrospective policy analysis that focused on problem structuring. Three documentary data sources were used to establish the chronology of events, communication, and responses from hospital administrators for each case. Contextual similarities in the two cases included the patient population, the type of hospital, the absence of magnet hospital characteristics, and the length of the problem-structuring period.

The themes of timing, focus, evidence, administrative responses to RNs and parents, and the role of the media were highlighted. In both hospitals, nurses correctly defined the problem in the first month as an unexpectedly high number of deaths. Administrative accountability was absent throughout the 9-10 month problem-structuring period. Failures of individual administrative accountability were compounded by shortcomings in organizational structure and administrative procedures.

This thesis is dedicated to the memory of the children who died at Toronto Sick Children's Hospital on Ward 4A and 4B June 30, 1980 – March 22, 1981

Laura Woodcock
Alan Perreault
Andre Bilodeau
David Taylor
Amber Dawson
Lillian Hoos
Philip Turner
Dion Shrum
Kelly Ann Monteith
Paul Murphy
Antonio Velasquez
Lauretta Heyworth
Brian Gage
Richard McKeil
Antonio Adamo
Francis Volk
Matthew Lutes
John Onofre

Darcy MacDonald
Real Gosselin
Stephanie Lombardo
Jesse Belanger
Janice Estrella
Frank Fazio
Bruce Floryn
Jennifer Thomas
David Leith
Colleen Warner
Jordan Hines
Barbara Gionas
Michelle Manojlovich
Kevin Pacsai
Kristin Inwood
Charlon Gardner
Allana Miller
Justin Cook

and to the memory of the children who died while undergoing cardiac surgery at Winnipeg Health Science Centre in 1994

Gary Caribou
Jessica Ulimaumi
Vinay Goyal
Daniel Terziski
Alyssa Still
Aric Baumann

Shalynn Piller
Erica Bichel
Ashton Feakes
Marietess Tena Capili
Jesse Maguire
Erin Petkau

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CHAPTER ONE

INTRODUCTION

Late in 2000 the Honorable Justice Sinclair released the Manitoba Pediatric Cardiac Surgery Inquest Report on the deaths of 12 neonates, infants, and young children who had died while undergoing or recovering from cardiac surgery. Justice Sinclair found that, besides human error, there were serious problems within the administrative structure at the Winnipeg Health Sciences Centre (WHSC) relating to risk management, program planning, and communication between individual professionals and departments. The nurses working in the Operating Room (OR), Pediatric Intensive Care Unit (PICU), and Neonatal Intensive Care Unit (NICU) had expressed their concerns about the clinical outcomes of the cardiac surgical procedures to their managers, physicians, and administrators, who responded by minimizing these concerns as emotional responses to unfortunate outcomes. One of Justice Sinclair's most provocative remarks concerned the treatment of the skilled and experienced nurses. He stated, "Of particular importance is that nurses not be treated by doctors and hospital administrators as under trained subordinates, whose concerns can be readily dismissed as emotional responses to tragic outcomes" (Sinclair, 2000, p. 466).

This was not the first situation in which Canadian hospital administrators had failed to respond to nurses' concerns about the number of sudden, unexpected pediatric deaths. Fourteen years before the events at WHSC, 36 infants and children unexpectedly died between June 30, 1980, and March 22, 1981, on adjoining wards 4A and 4B at Toronto Sick Children's Hospital (TSCH). In the summer of 1980 the nurses working in these wards had expressed concerns about unexpected deaths. In September 1980 two

formal meetings of nurses and cardiologists were held to review six of the charts; no one could determine whether the children had died because of the severity of their conditions or for another unknown reason (Dubin, Gilchrist, McDonald, & Nadler, 1983).

There is no record of administrative action taken in response to the concerns that nurses had expressed, and the Medical Advisory Committee (MAC) and the Risk Management Committee (RMC) at TSCH did not receive any reports about the number of unusual deaths. The problem finally received acute attention in March 1981 when a routine autopsy revealed a very high level of digoxin in the tissues of one of the dead infants. The hospital referred the death to the coroner, who enlisted the help of homicide detectives in the investigation. Subsequently, police arrested a registered nurse, Susan Nelles, and charged her with murder. The ensuing investigation suggested that 36 babies had died under suspicious circumstances. A preliminary hearing found a lack of evidence against Susan Nelles, and the legal charges against her were discharged. Public concern and disapproval prompted the government to strike a Royal Commission, headed by Justice Grange, to inquire into the infants' deaths.

There are some striking similarities between these two situations. In both a significant number of children died unexpectedly. Nurses at both hospitals had specific concerns about these unexpected deaths that they communicated through formal organizational channels. In both situations the public became aware of the problems through media reports. Three government initiated reviews, presided over by a judge—the Royal Commission of Inquiry into Certain Deaths at the Hospital for Sick Children (Grange, 1984), the Report on the Hospital for Sick Children (Dubin et al., 1983), and the Report of the Manitoba Pediatric Cardiac Surgery Inquest: An Inquiry into Twelve

Deaths at the Winnipeg Health Sciences Centre in 1994 (Sinclair, 2000)—resulted from the overwhelming public outcries.

Although the public demanded to know how such events could occur in public institutions and the various judicial hearings provided some significant answers, it is important for health care professionals (HCPs) and administrators to consider how and why these situations were allowed to escalate within the hospitals until they were eventually dealt with in the public policy arena through a Royal Commission, a government-initiated investigation, and a government-initiated inquest. In order to prevent similar occurrences, it is vital that policy and decision makers understand how these events developed, how administrative officials responded to them, and what other alternatives might have been available.

Purpose of Study and Significance

The purpose of this study is to describe and compare events and processes by which unexpected infant deaths at two major hospitals (Toronto Sick Children's Hospital and Winnipeg Health Science Centre) in 1980-1981 and 1994 were acknowledged and became high-profile policy issues and the subject of government initiated reviews, presided over by a judge.

Significance for Nurses and the Nursing Profession

Reports of the Grange Commission (Grange, 1984) and Sinclair Inquest (Sinclair, 2000) revealed the extent to which nurses and the nursing profession were silenced in both situations. As Justice Sinclair noted, there was a lack of respect for nursing expertise, knowledge, and judgment. In both situations registered nurses were the first to raise concerns about the number of unexpected deaths and, in the case of WHSC, the

quality of care that was provided. In both hospitals significant time elapsed before there were responses from administrative officials. Nurses who testified at the Grange Commission were subjected to intense questioning about their practice, consistent with the suggested hypothesis "that it had to have been a nurse who administered digoxin deliberately" (Charbonneau, 1985, p. 17). Before closure of the pediatric cardiac surgical program at WHSC, the surgeon implied that a nurse's actions postoperatively started the downward spiral in the death of one particular infant, even though failure of a cardiac pacing wire caused it (Sinclair, 2000). At WHSC the Wiseman Committee was formed in May 1994 to review the unexpected deaths after the anesthetists withdrew their services. At one meeting of this committee, the senior cardiologist verbally attacked a female anesthetist, causing the nurse present to refrain from verbalizing her concerns about the program (Sinclair, 2000). No one listened to the nurses who were willing to speak, and the actions of others silenced them. A systematic comparison of these two case situations provides an opportunity to examine what nurses attempted to do to prevent an escalation in the number of deaths and the actions of organizational administrators in each situation.

This retrospective analysis of events at the TSCH (referred to as Case I in this report) and WHSC (referred to as Case II in this report) has been undertaken to understand how administrative officials viewed and responded to the problem of unexpected deaths that were reported to them over a significant period of time. How and why were these deaths able to continue until they became known to the public and resulted in high-profile inquiries initiated by provincial governments?

Significance for the Canadian Public

When Canadians seek health care, they are expecting that everyone, including support staff, clinical health care professionals, and administrative officials, will place priority on their best interests. They expect safe, competent care and the best outcomes possible. For the infants and children who are the subject of the Grange Commission (Grange, 1984) and the Sinclair Inquest (Sinclair, 2000), death was a possible outcome because most were seriously, if not critically, ill. Understanding this, parents placed their trust in professionals, organizations, and systems, assuming that consideration of their child's safety would be preeminent. The parents and general public knew nothing of the risks and problems in either hospital until the media reported the arrest of Susan Nelles in Toronto and the temporary closure of the pediatric cardiac surgical (PCS) program in Winnipeg in response to unexpected deaths and unexpectedly high complication rates.

Problems of the magnitude investigated in these public inquiries do not develop overnight. The public demands and supports inquiries, expecting that the cause(s) of the problem will be uncovered and steps put into place to prevent a reoccurrence. In each of these cases a reasonable assumption is that the problems should have been identified and administrative actions taken before so many children died.

A retrospective policy analysis of these two episodes in Canadian health care history was undertaken with the objective of understanding how and why the problems were not addressed internally before they exploded into public consciousness and public investigations began. More recently, similar problems have happened elsewhere. The value of conducting such an analysis was confirmed when the results of a Royal Commission established in June 1998 to inquire into unexpected infant deaths at the

Bristol Royal Infirmary were reported in July 2001 (Bristol Royal Infirmary Inquiry, 2001). In this instance, as in the two Canadian cases, there was no administrative action until after a whistle-blowing event occurred, and the public's concern led to the initiation of the Royal Commission. In all of these cases there was value in attempting to document and understand the responses of individuals in formal leadership positions as events unfolded.

Research Questions Guiding the Study

Research questions were developed to structure the study and analysis, following an initial reading of the Grange Commission report (Grange, 1984), the Dubin Report (Dubin et al., 1983), and the Sinclair Inquest Report (Sinclair, 2000). A preliminary review of these reports was necessary to confirm that the research questions could be answered using the judicial reports as the main data source. The research questions are as follows:

1. When and under what circumstances were infant deaths in the two hospitals identified as deviations from expected outcomes?
2. Why and by whom were infant deaths identified as deviations from expected outcomes?
3. How, when, and by whom were concerns about these unexpected infant deaths communicated?
4. What were the responses of individuals in positions of responsibility and of the organization to the initial communications about unexpected infant deaths?

5. What other communication about unexpected infant deaths occurred? What were the individual and organizational responses and results of other communication about the unexpected infant deaths?
6. What are the similarities and differences in the communication processes that were available and used in the two hospitals?
7. What are the similarities and differences in the chronology of events and responses at these two hospitals?
8. What were the internal and external milestone events that led to the initiation of public inquiries?
9. What conclusions and policy implications can be drawn from the way that issues related to the unexpected infant deaths were defined and dealt with in the two hospitals in the period of time before the public inquiries were initiated?

Overview of the Study

An inductive approach was employed in this study. Therefore, the review of literature prior to the commencement of the study was confined to an examination of references that would be helpful in developing the methods for the study and confirming its potential significance. A preliminary reading of the main data sources (i.e., the judicial reports) was necessary at this stage to confirm the feasibility of conducting the study as planned and the likelihood of being able to answer the research questions that were posed.

In Chapter Two of this thesis the methods and procedures guiding the study are described. The events examined in Case I occurred at TSCH in 1980-1981. The events

examined in Case II occurred at the WHSC in 1994. The various data sources in the study—that is, the judicial reports, media reports, and professional literature—are described. The concept of rigor is examined, and this section details how rigor was established for this study. The chapter ends with an explanation of procedures used in data synthesis and analysis.

Chapter Three contains descriptions of the contexts in which the events of each case occurred. Contextual factors within the hospitals and/or within the greater health care system are described for each case situation. The contextual factors considered are the organizational structure of the hospitals, the historical and current time frame, government funding, administrative structural changes, and capacity.

In Chapter Four the findings are presented. The findings for questions 1 through 3 were answered by considering the chronology of milestone events, recognition and reporting, and discussion. Questions 4 through 9 required a different approach. The findings for question 4 document the initial administrative responses to reported concerns and observations. The findings for question 5 document administrative responses to concerns and observations reported after the first two months. The findings for question 6 document the communication processes that occurred. Similarities and differences in the chronology of events are presented to answer the seventh question. The findings for question 8 are presented in a summary and comparison of the milestone events of both cases.

Chapter Five contains a discussion of the policy implications that can be drawn from the way that issues related to the unexpected infant deaths were defined and dealt with in the two hospitals in the period of time before the public inquiries were initiated.

The conclusions and implications that can be drawn from the milestone events are examined. The findings are interpreted in the context of selected literature.

In Chapter Six the thematic similarities between the two cases in this study are reviewed, the contributions of this study are discussed, and recommendations for health care leadership and areas for further study are made.

Usage and Definition of Terms and Acronyms

In this report some words and phrases have a meaning particular to this study. For example, the term *unexpected deaths* has been used to refer to deaths that were not anticipated at the time that they actually occurred. Appendix A contains an alphabetical list of terms used in this study.

Overview of Definition of Terms

Clinical Terms

Several terms appear in the data and are used in this report to refer to patients. *Pediatrics* is the study of patients who have not yet reached the developmental stage of adulthood; *children is the nonmedical term referring to this group.* The term *infants* has a variety of meanings, but for the purposes of this study refers to children under the age of two. *Neonates* are newborn infants up to the age of 28 days.

Pediatric cardiology is the medical practice of diagnosing and treating children's heart problems. *Pediatric cardiac surgery* is the medical practice of surgery on children's hearts. Many of the children who were the subject of the Grange Commission and Sinclair Inquest were critically ill, meaning that they required quick and constant medical attention.

Organizational and Procedural Terms

Certain terms refer to medical or clinical specialties and the positions of individuals within the medical hierarchy. *Executive administration* refers to the President or Chief Executive Officer and those who report directly to these individuals. In Case I the Chief of Pediatrics reported to an executive administrator. In Case II the medical department heads and the director of nursing reported to a Vice President. *Senior administrators* are those who reported to a Vice President or executive administrator. *Senior administrative positions* in Case I include Directors of Divisions. In Case II senior medical administrative personnel were called Department Heads.

Certain terms refer to administrative structures rather than administrators. A *portfolio administrative structure* is the grouping together of all personnel who deliver a particular service for the purpose of management and administration. For example, a department of nursing provides nursing services. In a *program administrative structure*, all personnel working in one particular program report to the same person(s), in order to enhance collaboration and communication. In Case II the Pediatric and Child Health program included nurses, physicians, technicians, and support staff. The directors of the program reported to the same Vice President. The word *team* has two different meanings in this study. In Case I there were nursing teams who worked together in the same rotation. In Case II a team was a group of HCPs who collectively provided a particular service.

Policy Methods and Terms

This study employs certain words when referring to policy issues. Policy analysis employs "multiple methods of inquiry. . . to produce and transform . . . information that

may be utilized in political settings to resolve public problems" (Dunn, 1981, p. 60). A *policy problem* is "an unrealized need, value, or opportunity . . . [that] . . . may be attained through public action" (p. 60). *Problem definition* is the "process of characterizing a substantive problem in its most basic and general terms" (Dunn, 1994, p. 185). *Problem structuring* is the method "used to produce information about the nature of a problem and its potential solutions" (p. 60). *Retrospective policy analysis* is producing and transforming of "information after policy actions have been adopted" (p. 60).

Acronyms

Many of the phrases used in this thesis are commonly expressed as acronyms. For example, registered nurse is most commonly referred to as *RN*; the operating room is the *OR*. In this report such phrases are initially given in full, such as *health care professional,* followed by the acronym in brackets *(HCP)*. Thereafter, only the acronym appears. Other repetitive phrases are not commonly expressed as acronyms, yet they lend themselves to acronyms that are more manageable than using the entire phrase each time. For example, Winnipeg Health Science Centre is referred to as WHSC. An alphabetical list of all acronyms is contained in Appendix B.

Reference to Key Personnel

The evidence given by many different individuals has been discussed in over 1,000 pages of the judicial reports. Within the texts of these reports there was no consistent approach in referring to individuals. For example, the Grange Commission report (Grange, 1984) referred to physicians and medical residents using their professional or academic credentials and surname; for example, Dr. Rowe. The same

report referred to nurses by first and last name, without professional or academic credentials. For example, the nurse who received much attention during the events in Toronto was called either Miss Nelles or Susan Nelles. The Grange Commission report (Grange, 1984) lists all of the persons giving evidence and includes the academic title of *Dr.* for physicians, medical residents, and one nurse providing expert testimony. Individuals who gave evidence about nursing were referred to as either *RN* or *RNA*; Justice Grange did not include any other academic credentials that the witnesses may have had. In the Dubin Report (Dubin et al., 1983) no hospital personnel are referred to by name. Instead, terms such as *physician* and *nurse* were used. In the Sinclair Inquest Report, Justice Sinclair (2000) used a standard approach in which he introduced the people and their credentials and/or position and subsequently referred to them by their surnames only. For example, he introduced one of the physicians as Dr. George Collins, Section Head of Pediatric Cardiology. Thereafter, this physician was referred to as *Collins*. The nurses were introduced in a similar manner. The Sinclair Inquest Report did not provide a list of witnesses that includes their academic credentials.

In this thesis a standard approach has been adopted in which individuals are referred to in terms of their credentials and position, if these are known, and surname; for example, the Operating Room Head Nurse, Registered Nurse Dixon. This approach is intended to assist the reader and to eliminate bias as evidence from the reports is presented and discussed. A list of key personnel mentioned in this study, their positions, and their credentials, if known, is presented alphabetically in Appendix C.

Overview of Chronology

Finally, to assist the reader in understanding the details of subsequent chapters' events, abbreviated chronologies of the cases that highlight the key events are presented in Tables 1 and 2.

Table 1

Overview Chronology: Toronto Sick Children's Hospital

Month (date)	Event
(February 1980)	Steven Yuz died from debilitated state (a subject in Dubin report)
(June 30, 1980)	One child died
Month 1 (July 1980)	• Six children died (normal number is less than one/month) • Nurses sought assistance from the Clinical Nurse Specialist (CNS) • Parent expressed concerns re: circumstances of child's death
Month 2 (August 1980)	• Five children died • Nurses sought assistance from the CNS • Nurses reported concerns to nursing and medical administration
Month 3 (September 1980)	• Hospital administration held two mortality reviews and concluded that the deaths were from natural causes • Two children died
Month (October 1980)	Three children died
Month 5 (November 1980)	One child died
Month 6 (December 1980)	• Director of the Division of CV Surgery wrote a letter to the Director of the Division of Cardiology, expressing concern that children were dying post-operatively, when they were expected to live • Five children died

Month 7
(January 1981)
	• Formal review of deaths by medical and nursing administration
	  • 14 of the deaths classified as unexpected
	  • Minutes of meeting went to senior medical administrator
	  • Decision made to develop a proposal for an intermediate ICU and better monitoring equipment
	• Two children died
	  • One child had very high digoxin levels found during autopsy; these were not reported

(table continues)

Month (date)	Event
Month 8 (February 1981)	Three children died
Month 9 (March 1981)	• Ten children died • High digoxin levels found at an autopsy and reported • High digoxin levels found at January autopsy reported • Coroner notified • Coroner requested homicide detectives' assistance • High digoxin levels found in last baby to die—digoxin use contraindicated for this baby • Executive Director informed of investigation • Deputy Attorney General informed of investigation • RN Nelles arrested and charged with murdering four babies
Month 10 (April 1981)	Program Advisory Committee received request for more monitoring equipment
Month 19 (January 1982)	Preliminary inquiry for RN Nelles commenced
Month 23 (May 1982)	Preliminary inquiry for RN Nelles ended; Judge Vanek ruled not sufficient evidence to conclude RN Nelles administered digoxin overdoses
Month 24 (May 1982)	Order-in-Council given for Dubin Review Committee
Month 31 (January 28, 1983)	Dubin Review Committee Report released
Month 31 (April 1983)	Order-in-Council given for Grange Commission
Month 54 (December 31, 1984)	Grange Commission Report submitted to Attorney General

Table 2

Overview Chronology: Winnipeg Health Science Centre

Month (date)	Event
1979	Pediatric cardiologist stopped referring to pediatric cardiac surgeon because of poor outcomes
1983	Another pediatric cardiologist stopped referring to another pediatric cardiac surgeon
1986	Dr. Duncan, pediatric cardiac surgeon, arrived in Winnipeg
1993	• Dr. Duncan resigned • Three pediatric cardiologists resigned
February 1994	Dr. Odim, a new and inexperienced pediatric cardiac surgeon, arrived at WHSC
Month 1 (March 1994)	• First open heart surgery performed, marked by technical difficulties • Nurses identified poor surgical outcomes • PICU nurses expected to perform OR procedures • Two children died
Month 2 (April 1994)	• Continued technical difficulties observed in the OR • RNs verbally reported observations and concerns to nursing and medical administration • Anesthetists reported observations and concerns to medical administration • DON discussed problem with medical department head • Medical section head assisted with one surgical procedure and determined that there were no problems • Two children died
Month 3 (May 1994)	• DON informed VP Nursing of problems in PCS program (VP remembered that this meeting took place in the fall) • Continued technical difficulties observed in the OR • Communication between various medical administrators • One child died • Anesthetists withdrew from the PCS program • Wiseman Committee formed to deal with issues
Month 4 (June 1994)	• Reorganization from portfolio to program management structure • Department Head, Pediatrics, left • Wiseman Committee met regularly • Continued technical difficulties observed in the OR
Month 5 (July 1994)	• Continued technical difficulties observed in the OR • Wiseman Committee continued to meet—disagreement about beginning high-risk cases

(table continues)

Month (date)	Event
Month 6 (August 1994)	• Continued technical difficulties observed in the OR • Medical administrator applied pressure on anesthetists to resume high-risk cases • Dr. Wiseman wrote interim report, recommending resumption of high-risk cases • Two children died
Month 7 (September 1994)	• Continued technical difficulties observed in the OR • PCS program resumed high-risk cases • New Department Head, Pediatrics, appointed • Pediatric Cardiac Surgeon wrote a letter detailing concerns he had with the PCS program • Department Head, Pediatrics, began to gather information about the PCS program • VP (formerly of Nursing) informed of problems in PCS program • One child died
Month 8 (October 1994)	• Continued technical difficulties observed in the OR • Medical Department Heads met to discuss problems in PCS program • One child died
Month 9 (November 1994)	• Continued technical difficulties observed in the OR • Family of child who died in month 7 met with medical administrator and were given false cause of death • Eleventh death precipitated PCS team members' reporting of observations and concerns to medical and nursing administrators • Two children died
Month 10 (December 1994)	• Continued technical difficulties observed in the OR • NICU expressed concern re: number of babies arriving post-operatively with open chests • Department Head, Pediatrics, asked VP how to close a program • One child died • Twelfth death precipitated key individuals' withdrawal from the PCS program • Medical administrators, who had no authority or responsibility for the PCS program, shut the program down pending external review
Month 11 (January 1994)	• External review of program by Drs. Williams and Roy of TSCH

(table continues)

Month (date)	Event
Month 12 (February 1994)	• Drs. Williams and Roy submitted report • Meeting of medical administrators—decision made to explore alternatives for the program • CEO informed • CEO, VPs, Department Heads, Deputy Minister of Heath, government officials meet—decision made to suspend program • Pediatric Cardiac Surgeon informed he would not be the surgeon when the program resumed • Press release informed public about PCS suspension • Chief Medical Examiner reviews cases • Parents of deceased children informed of closure via media
Month 13 (March 1994)	CME announced Sinclair Inquest
1995-1998	Sinclair Inquest heard evidence
Month 81 (November 2000)	Sinclair Inquest report released

CHAPTER TWO

METHODS AND PROCEDURES

In this chapter the research methods and procedures are described. The study was designed as a retrospective policy analysis of two cases with a specific focus on how the approach to defining the problems affected the outcomes in each case. A descriptive case study approach was used to compare the events that occurred at TSCH in 1980-1981 (Case I) and at WHSC in 1994 (Case II). The data sources for the two cases were three judicial reports, professional literature, and media reports. The procedures adopted to achieve rigor in the research are explained. An iterative process was used in the analysis of each case, allowing for development and confirmation of a chronology for each case that could then be used to compare the two cases. The criteria for the selection of milestone events in the cases are presented. All of the sources of data had some limitations, and these are discussed.

Policy Analysis

Public Policy

Public policy develops through a process whereby a problem in society or an institution develops or becomes known and becomes a policy issue. Dunn (1981) presented a model of this process, as shown in Figure 1. The policy process starts with problem structuring, consideration and decision of alternatives, and policy actions and implementation, followed by outcomes and evaluation, which often lead to refinement of the problem or to an entirely new problem. This study focused on the problem structuring (defining) portion of the policy cycle.

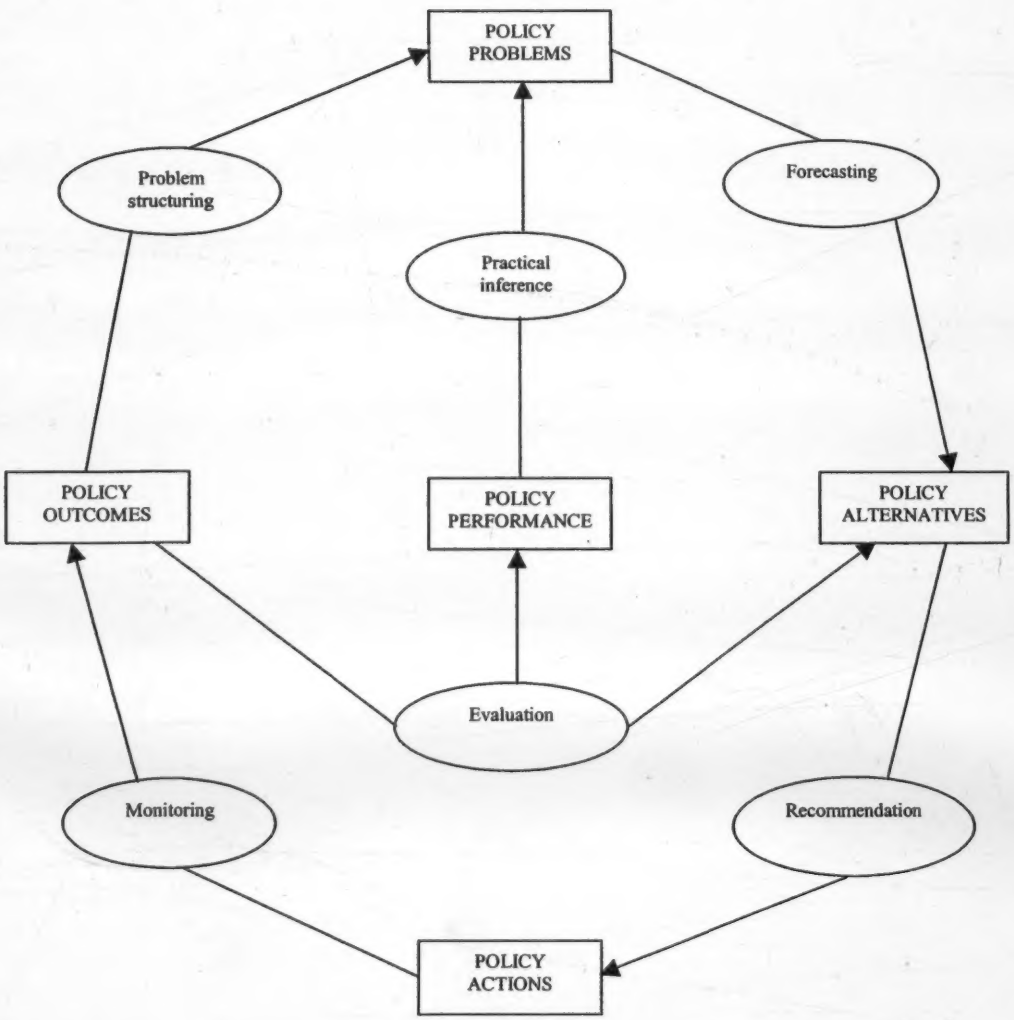

Figure 1. The process of policy analysis (Dunn, 1981, p. 48).

Policy Analysis

Policy analysis

> uses multiple methods of inquiry and argument to produce and transform policy-relevant information that may be utilized in political settings to resolve policy problems. The scope and methods of policy analysis are partly descriptive, and factual information about the causes and consequences of policy is essential for understanding public problems. (Dunn, 1981, p. 35)

Retrospective Policy Analysis

Retrospective policy analysis uses information generated after policy implementation and evaluates what led to a decision and the effects of implementing that decision. This analysis can provide new frameworks for policy analysis, change the current problem structure, and shape public opinion on policy (Dunn, 1981).

In this study retrospective policy analysis was selected as a conceptual and methodological approach that would particularly enable analysis of how the problem of unexpected infant deaths in two hospitals continued, and escalated, over a 9- to 10-month period during which no administrative action was taken to structure or respond to the problems. The practical goal of the analysis was to produce information about how problems were defined within each case setting and to understand factors that influenced the problem-structuring phase, which, in each of the two cases, was concluded through government initiated reviews outside of the hospital where the problems occurred.

Problem Structuring

Problem structuring is a critical phase in the overall policy cycle (Dunn, 1981, 1994). The way that a problem is structured can constrain or add to the amount and type of information used to arrive at policy options and decisions. The point of problem structuring is to discover where the problem is within the whole and how it affects the

whole society or institution (Dunn, 1981). More specifically, a policy problem is "an unrealized value, need or opportunity which, however identified, may be attained through public action" (p. 44). Problems start when a stakeholder believes that there is a problem: Needs, values, or opportunities are being disturbed or not satisfied. In other words, policy problems occur when there is a discrepancy between what is and what should be in the eyes of the stakeholders (J. Church, personal communication, February 6, 2002).

Even when a problem is recognized, there may not be agreement among the stakeholders as to what the problem really is (Dunn, 1981). There may be a problem, "but no one knows yet what the problem is. . . . In other words, the situation is such that the problem itself is problematic" (Rein & White, 1977; as cited in Dunn, 1994, p. 147). This is because individuals define and interpret phenomena differently (Rochefort & Cobb, 1993). Other influences in the problem-structuring phase may be those of structure: history, economics, interest groups, public press, and unpredictable events (J. Church, personal communication, February 6, 2002). Understanding what the true problem is is more important than getting the solution right (Dunn, 1981).

Rochefort and Cobb (1993) defined the term *problem definition* as

> the processes by which an issue (problem, opportunity, or trend), having been recognized as such and placed on the public policy agenda, is perceived by various interested parties; further explored, articulated, and possibly quantified; and in some but not all cases, given an authoritative or at least provisionally acceptable definition in terms of its likely causes, components, and consequences. (Hogwood & Gunn, 1984; as cited in Rochefort & Cobb, 1993, p. 57)

The term problem definition has been adopted in this study to describe the problem structuring phase of the policy cycle.

A framework developed by Rochefort and Cobb (1993) provides further insight into the process of problem definition. The framework is presented in Table 3. Problem definitions are shaped by the way the problem is described. This framework highlights various possible dimensions of situations in which policy problems may need to be structured or defined. The first dimension is that of the cause of the problem. Can the cause for the policy problem be identified as a person(s), or is it caused by systems failure? Is the problem caused by an intervention failure or an accident? Can blame be allocated or not? Finally, is the problem caused by something very simple or very complex?

The next dimension in problem description is that of the nature of the problem, which can be described in terms of its severity, incidence, novelty, and crisis. The degree of severity describes it seriousness. *Incidence* refers to the number of people affected and whether that number is increasing, remaining stable, or declining. *Novelty* describes a problem that is able to get public attention. *Proximity* refers to describing the problem as having personal relevance or as a general societal concern. *Crisis* and *emergency* refer to the urgency of solving the problem.

Another dimension of the problem is the characteristics of the problem populations. The population can be described as familiar, in sympathetic ways, or as deserving of attention or not. Problems may also be described in terms of means or by the ends. The final dimension is to describe whether a solution is available, acceptable, and affordable or not. Considering all of these dimensions allows a detailed examination of the process of problem definition (Rochefort & Cobb, 1993).

Table 3

An Anatomy of Problem Description

Dimension of problem	Options
Problem causation	Personal-impersonal Intended-accidental Blame allocated-blame avoided Simple-complex
Nature of the problem	
Severity	Degrees of severity
Incidence	Growing, stable, or declining Social patterns: by class, population Cohort, age, etc.
Novelty	Unprecedented-familiar
Proximity	Personally relevant-a general social concern
Crisis	Crisis-noncrisis Emergency-nonemergency
Characteristics of the problem population	Worthy-unworthy Deserving-undeserving Familiar-strange Sympathetic-threatening
Ends-means orientation of problem definer	Instrumental-expressive
Nature of the solution	Available-nonexistent Acceptable-objectionable Affordable-unaffordable

(Rochefort & Cobb, 1993, p. 62)

Descriptive Case Study

Descriptive research is used to explain or illustrate a specific phenomenon in a particular population (Brink & Wood, 1998). The case study approach is a type of descriptive research particularly well suited to answering 'how' and 'why' questions (Yin, 1984b). More specifically, a case study is a method of research that "investigates a

contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (p. 23). The case study approach provides for an "in-depth investigation of an individual group, institution . . . to analyze and understand the variables that are important" (Polit & Hungler, 1991a, pp. 207-208).

This approach is especially useful in policy and public administration research, when there is no control over the events. Specifically, case studies are useful when the researcher wants to describe the causal links in the context and circumstances of real events (Stake, 1995a; Yin, 1984b). In so doing, the researcher may gain insights into "previously unsuspected relationships" (Polit & Hungler, 1991a, p. 208). In this study a series of events that took place in each of two children's hospitals concluded when the government initiated reviews. Judicial reports of the inquiries were examined with a particular focus on the responses or action of individuals who held positions of formal authority. Of particular interest in this study is how these administrators defined or failed to define problems or issues brought to their attention during the period examined in the study. For purposes of this study, the period of time that preceded the governments' decisions to initiate the public inquiries in each case is viewed conceptually as comprising the problem-structuring phase in the policy cycle (Dunn, 1981).

The descriptive case study method was chosen as the best means for achieving the research objective. Two separate cases, one at TSCH in 1980-1981 and the other at WHSC in 1994, were selected for study. The opportunity to compare the problem-definition process in these two widely known cases has the potential to add rigor and generalizability to the conclusions. Detailed procedures were developed and documented

to formalize the comparison of cases, to ensure the potential for replicability, and thereby to reduce or eliminate the potential for bias.

Data Sources for This Study

Case studies use three different sources of information: written data, interviews, and observation. Written sources that can be used in case study include formal reports, letters, memos, minutes, and formal studies (Stake, 1995a; Yin, 1984a). Because the events in this study happened in the past, observation was not possible. The primary data sources for this research were three judicial reports that consisted of over 1,000 pages of written text. In view of the volume of written material to be considered, a decision was made in consultation with the supervisory committee to restrict the data sources for the study to written materials. Other written materials examined in the study are public media reports and articles, and published professional literature.

The Judicial Reports

The term *government initiated review* has been used to refer to the three proceedings. These proceedings are different in their origins and mandates, but all had common features. There was direct ministerial involvement in the decision to initiate each proceeding. A judge presided over each of the proceedings, and there was public reporting of findings. The judicial reports established the facts of the cases and provided statistics and expert opinions. The characteristics of these reports are summarized in Table 4.

Table 4

Key Characteristics of the Judicial Reports

Author	Date commissioned	Title	Number of pages	Purpose	Date released
The Hospital for Sick Children Review Committee Honorable Mr. Justice Charles L. Dubin; J. M. Gilchrist R. N., M.Sc. (Applied), B.N.; H. D. McDonald M.D., D.H.A.; H. L. Nadler M.D.	June 3, 1982	Report on the Hospital for Sick Children review committee	13 pages in preface 238 including two pages of "schedules"	To investigate and report on the quality of administration and patient care at TSCH	January 19, 1983
The Honorable Mr. Justice Samuel G. M. Grange, Supreme Court of Ontario Commissioner	April 21, 1983	Report of the Royal Commission of Inquiry into Certain Deaths at the Hospital for Sick Children and Related Matters	10 pages listing witnesses at the beginning of the report, 276 pages, including appendices	To inquire into and report on how and by what means children on ward 4A/B died between July 1, 1980 and March 31, 1981.	December 28, 1984
Associate Chief Judge Murray Sinclair	March 5, 1995	The Report of the Manitoba Pediatric Cardiac Surgery Inquest: An Inquiry into Twelve Deaths at the Winnipeg Health Sciences Centre in 1994	4 pages of executive summary, 2 pages for introduction, 2 pages for acknowledgements 515 pages, including appendices	To determine who died, circumstances surrounding the death(s), how the death(s) occurred and whether the death is preventable.	November 27, 2000

Case I: Toronto Sick Children's Hospital

The Dubin Report was mandated by an Order-in-Council of the Ontario provincial government after a series of high-profile deaths, including those on Wards 4A and 4B at TSCH in 1980-1981. The other deaths took place before and after these deaths. The Review Committee was commissioned by the Ontario provincial government to examine the administrative structure, policies, and procedures, with a special focus on the events of Ward 4A and 4B in 1980-1981. The Order-in-Council came less than three weeks after a preliminary hearing concluded that there was insufficient evidence to try Registered Nurse Susan Nelles on the charges of murder. The Review Committee reported on all services of the TSCH and submitted the Dubin Report (Dubin et al., 1983), including 98 recommendations, seven months after receiving the Order-in-Council. No names of hospital personnel are used in the Dubin Report; rather, words such as *physician* and *nurse* are used in discussion of the events examined.

The appointment of the Grange Commission by an Order-in-Council of Ontario occurred after release of the Dubin Report (Dubin et al., 1983) and after an intense investigation by the police into the deaths on Ward 4A and 4B did not result in any arrests. Part of the mandate of the Grange Commission was "to inquire into and report on . . . how and by what means children who died in Cardiac Wards 4A and 4B . . . between July 1st, 1980, and March 31st, 1981, came to their deaths" (Grange, 1984, p. 2). During the course of the hearings before the Grange Commission, the Court of Appeal ruled that Justice Grange could not name an individual(s) as administering an overdose(s) of digoxin (Grange, 1984). Justice Grange submitted his report in December 1984. The Grange Commission report omitted the names of individuals involved in the care of the

deceased children, including the names of the nursing team on duty when most of the children died and the name(s) of the physician(s) involved in the care of the children and/or who were involved in the resuscitation attempts. In the second part of the Grange Commission, Justice Grange examined the circumstances surrounding RN Nelles' arrest, the charges against her, and the preliminary hearing. During this portion of the report, names were used. Justice Grange did not make any recommendations regarding the hospital administration, because he believed that he could not add to the recommendations found in the Dubin Report (Grange, 1984).

Case II: Winnipeg Health Science Centre

On March 5, 1994, the Chief Medical Examiner (CME) for the Province of Manitoba called for an inquest into the deaths of children who underwent pediatric cardiac surgery in 1994, less than three weeks after the media reported the suspension of the PCS program at WHSC. According to Justice Sinclair (2000), the inquest was called because the parents of the deceased children were demanding an inquiry, and after consultation with the Minister of Justice and other Department of Justice officials. Although the mandate of this inquest was the same as for all inquests, it was initiated, not as a procedural matter, but in response to expressions of public concern. The Sinclair Inquest was ordered to determine who died, the manner of each death, whether the death was preventable, and whether policies and procedures of WHSC should be changed to prevent future deaths (Sinclair, 2000). Even though the Sinclair Inquest could not make findings of culpability, Justice Sinclair described the actions of those involved, directly and indirectly, in the events surrounding the children's deaths. One of the witnesses provided testimony in the fall of 1995, and the majority of the hearing took place from

1996 to 1998. The Sinclair Inquest Report was submitted on November 27, 2000, almost six years after the first death.

Published Commentary

Published commentary provided additional expert opinion, information and insight into the societal values and contextual factors that prevailed at the time that these events unfolded. Various databases were searched for newspaper and magazine articles discussing and/or reporting the events at TSCH (Case I) and WHSC (Case II). Articles not indexed were discovered that related to Case I, and the micro-reel films of newspapers were perused, meaning that more articles were found and read than had actually been listed in the index. Although there is great efficiency in accessing newspaper articles online, articles that have not been indexed, or are indexed under different key words from those used in the search, are then missed. Possibly for this reason, and possibly because of the notoriety of Case I, more articles pertaining to Case I than to Case II were found. A summary of the number of articles reviewed for this study is provided in Table 5.

Table 5

Number of Articles Accessed

	Case I	**Case II**
Newspaper articles	283	145
Professional articles	21	18
Magazine articles	19	2
Total	**323**	**158**

Limitations of the Data

The primary source of information for the judicial inquiries was the testimony of witnesses. For practical reasons, the transcripts of witnesses' testimony during the inquiries were not accessed for this study. For the purposes of this research, it was assumed that the judicial reports would contain the salient facts of each case, including relevant statistics and expert opinions. However, it was recognized that the judicial reports might not contain all relevant facts or expert opinions, and therefore this research is limited by the choices and interpretations of the Dubin Review committee and Justices Grange and Sinclair. As data sources, the media reports and published professional literature also have certain limitations. For example, much of the media reporting in Case I was sensational, such as the headline, "Nurse held dead baby for parents' last kiss" (Brazao, 1981, p. A1). The published literature often focused on the poor treatment of nurses rather than on explaining the events. It was beyond the practical scope of this research project to locate and interview key informants who might have added to the written information available for analysis. The data sources for each of the two cases are now described in more detail.

Case I: The Toronto Sick Children's Hospital

Judicial Reports

Two judicial reports focused on the TSCH. The focus of the Report of the Royal Commission of Inquiry into Certain Deaths at the Hospital for Sick Children and Related Matters (Grange Commission; Grange, 1984) is confined to the deaths of 36 children on Wards 4A and 4B. The focus of the Report on the Hospital for Sick Children Review Committee (Dubin Report; Dubin et al., 1983) is administration, management, and the

quality of care provided at TSCH in 1982. Although the focus was not solely on the deaths occurring on Ward 4A and 4B in 1980-1981, these are considered in the report. Copies of these reports were found in the Weir Library at the University of Alberta; they were photocopied and placed in binders.

Professional Literature

Each issue of the *Canadian Nurse* journal from April 1981 to December 1985 was paged through, and all the articles addressing this case were photocopied. Index Medicus was used to search for articles in the *Canadian Medical Association Journal* (*CMAJ*) regarding Case I, but there were none. Because provincial professional health associations were not indexed, an e-mail was sent to the Registered Nurses Association of Ontario (RNAO) and the College of Physicians and Surgeons of Ontario. The RNAO sent photocopies of articles that they had published in their newsletter about the Toronto case. The College of Physicians and Surgeons of Ontario did not reply. A total of 21 articles were accessed.

Media Reports

The University of Alberta Rutherford Library reference librarian advised me as to which databases to search for newspaper and magazine articles. Many magazines had not been indexed in computerized databases prior to 1985, necessitating a manual search of database books. Databases accessed for non-newspaper media were Canadian Business and Current Affairs, Readers Guide to Periodical Literature, and Canadian Periodical Index. Keywords used for these searches include Toronto—hospitals, nurses/nursing, Nelles, murder, Dubin, and Grange. Magazines were limited to *Chatelaine* and *Macleans*, which are both national in scope. *Chatelaine* was chosen because it reports on women's

and health issues, and *Maclean's* was chosen because it reports events of national interest. There were 19 articles written about this case in these two magazines.

Newspapers are in computerized indexes, including the period in which Case I happened. The Canadian Business and Current Affairs electronic index was searched using the following keywords: Nelles, Grange, Dubin, Toronto Hospital for Sick Children, nurses, murder/baby. Articles were limited to those from the *Globe and Mail* because of its national audience and the *Toronto Star*, which is Toronto's main daily newspaper that emphasizes events within the community. Other Canadian city newspapers often ran the same story. Choosing these two was a way of limiting the volume of information. The database search of the two newspapers yielded 283 articles.

Once the list of references was obtained, the newspaper articles themselves were viewed on micro-reel film at the University of Alberta Rutherford Library, and they were photocopied. Rutherford Library did not have micro-reel film of all of the *Toronto Star* articles; interlibrary loan requests were submitted, and photocopies of the missing articles were received. Some of the magazine articles were hardcopy, and these were photocopied. Others were viewed on micro-reel film and photocopied.

Case II: Winnipeg Health Science Centre

Judicial Report

There is only one judicial report about the events at WHSC, The Report of the Manitoba Pediatric Cardiac Surgery Inquest: An Inquiry into Twelve Deaths at the Winnipeg Health Science Centre in 1994 (Sinclair, 2000). A hard copy of this report was purchased; it is also available online at http://www.pediatriccardiacinquest.mb.ca/.

Professional Literature

For Case II the online databases of CINHAL and MEDLINE were searched; they were accessed through the University of Alberta Library services. Key words used in this search were pediatric cardiac surgery, Winnipeg Health Science Centre, Variety Children's Hospital, Sinclair Inquest, Justice Murray Sinclair, Dr. Odim, Dr. Jonah Odim, and Carol Youngson. The resulting 11 references were photocopied from hard copies found in the University of Alberta Scott Health Science Library. Because the provincial professional health associations' newsletters are not indexed, an e-mail was sent to the College of Registered Nurses of Manitoba and the College of Physicians and Surgeons of Manitoba. The College of Physicians and Surgeons of Manitoba sent a copy of the 1994 Pediatric Death Review Committee Annual Report and another article. The College of Registered Nurses of Manitoba replied with the author, title, and date of the single article published in *Nurscene*. A copy of this was obtained through an interlibrary loan at the University of Alberta.

Media Reports

For Case II the online Canadian Periodical Index and the Canadian Business and Current Affairs were accessed via the University of Alberta library services. Key words used in the search were Sinclair, Justice Sinclair, Justice Murray Sinclair, heart surgery, pediatric cardiac surgery, pediatric cardiac surgical deaths, Winnipeg Health Science Centre, Winnipeg hospitals, Dr. Odim, Dr. Jonah Odim, and Carol Youngson. The results using these keywords and these databases yielded very few articles. Upon further advice of the reference librarian, another search was conducted using the Dow Jones Interactive database and the same keywords as mentioned above. This search resulted in many more

newspaper, magazine, and journal articles from the *Canadian Medical Association Journal* and the *Canadian Nurse*.

During the period that the events at WHSC occurred, Canada had two national newspapers. For continuity of process, the *Globe and Mail* was chosen for Case II. The *Winnipeg Free Press* was also chosen because it is the main Winnipeg daily newspaper. As with Case I, only these two newspapers were used to limit the volume of articles. A total of 145 articles was downloaded and printed. Magazines were limited to *Chatelaine* and *Maclean's* for the same reasons as in Case I. There were only two articles, one in each magazine. Both of the articles are available online and were printed off as hard copy.

Rigor and Objectivity

Systematic inquiry is characterized by the documentation of procedures. Such documentation is required to enable other researchers to repeat the procedures for collecting data or to repeat and confirm the analysis and conclusions. It is necessary that the evidence gathered and the subsequent interpretations made are dependable (Streubert, 1999).

The main sources of evidence for this study were the three judicial reports. A key assumption of the study is that the data in these reports are dependable, representing conclusions drawn by a judge after hearing evidence. Where the reports have been criticized in published professional commentary or media reports, these criticisms have been taken into account.

In this study the use of these three types of documentary evidence enabled a more complete picture of events to be constructed retrospectively. This was particularly

important in Case I. Much of the data found in the judicial reports are also found in many of the news media that covered the public hearings. The news media provided a few details that are not in the judicial reports. There are published criticisms about the judicial reports, but none claim that the contents are inaccurate. The professional literature provided some analysis of the reports.

Because no researcher follows exactly the same procedure, replicability is difficult (Polit & Hungler, 1991b). When the researcher leaves a written trail and organizes the case notes for easy retrieval, another researcher can follow the trail of evidence from research question to conclusion (Streubert, 1999; Yin, 1984a). The conclusions become stronger if another researcher can follow the evidence and is able to come to the same conclusions (Polit & Hungler, 1991b; Stake, 1995b).

Throughout the process of completing this project, all activities were organized into various files, establishing a trail of activity and thought, and all of the files were saved on computer hard drive and floppy disk. The resulting index simplified data retrieval. All of the data sources are in hard copy and sorted into binders, making referral to the original material straightforward. *ProCite*® was used to organize all of the references, and an iterative process was used to ensure completeness, freedom from bias, and confirmability of the results of this study, with these data, by another researcher.

One of the major problems of case studies is that it is very difficult to generalize to other populations, in other places, and at different times (Polit & Hungler, 1991a). The selection of two similar cases that had occurred in similar settings at different points in time and the use of the same procedures for analyzing each case enable an appropriate comparison to be made between these two cases. The use of two case studies adds to the

potential transferability of findings and conclusions. Explicit iterative procedures were used and could be followed by other researchers who might wish to repeat the study. The events that occurred at TSCH and WHSC were not isolated incidents. The most obvious similar event occurred at Bristol Royal Infirmary in England (Bristol Royal Infirmary Inquiry, 2001). Nurses in Canada identified with their colleagues when the events at TSCH and WHSC were first published because they experienced similar issues in their own workplaces. The findings of this study will have relevance to nursing and administrative practice in many other settings. The procedures employed in this study were developed and documented with the expectation that they might be applied to future case studies conducted in complex contexts.

Data Synthesis

The three data sources for each case were considered together, with points of agreement and contradiction noted. Issues and questions noted during the journaling process were followed up at this time. In some cases this process enabled the researcher to answer the question. Other questions are not possible to answer. For example, one question the researcher asked was whether murder had really happened on Wards 4A and 4B. It is possible but, given all the evidence, not probable. Many other issues and questions about the two cases remain outstanding because it was not possible to explore them within the scope of this study. For example, limiting the study to documentary evidence made it impossible to confirm some facts about organizational structure in Case I and to draw conclusions about features of the organizational culture in the two cases.

Some of the information is available from only one source. Most of the information about the children and their deaths is available only in the judicial reports. Other information is available only in the media. For example, questions about the reports raised in the Ontario legislature are readily accessible only in the print media or Hansard.

Analytical Procedures

The research questions in this study provided a framework for the prospective development of analytical procedures. For example, a chronology of the events was needed to understand and compare the two cases. Events were entered into the chronology if they had been reported in any of the three data sources. Thus, the chronology includes factual information not included in the judicial reports. The detailed chronology constitutes a form of 'raw' data from which questions can be answered and conclusions drawn. More important, other independent researchers could examine the same data (i.e., original texts) and verify the accuracy and completeness of the chronology.

An iterative process was used in the analysis of each case. The steps in the process were to read the judicial reports three times while making notes, and to organize these notes in tabular format. The professional commentary was similarly read and notes organized in tabular format. The news media reports were treated in the same manner. Once the data had been organized, it was possible to construct a detailed chronology, using the data from all three sources. The following descriptors were used to structure the analysis and answer the research questions: chronology, key events, key individuals, reporting structure, communications, milestone events, and issues and questions. To

present the findings in this report, these analytical categories were compressed under broader descriptors including the chronology of milestone events, the reporting structure and communication, and discussion. This procedure is described in more detail below.

Judicial Reports

Each of the judicial reports was read thoroughly three times and notes were taken to record and describe the key events, when they occurred, and who was involved. Using a structured journaling process, impressions, questions, and comments were recorded. As the journaling process continued, key words were found and/or certain words were used that had a particular meaning in the context of these reports. Then these words were listed and explicitly defined on a worksheet of operational definitions. For example, both the Grange Commission report (Grange, 1984) and the Dubin Report (Dubin et al., 1983) used the term *unexpected deaths*. There were also unexpected deaths in the Winnipeg case, although Justice Sinclair (2000) did not use this term.

Subsequently, the notes from the journaling process were organized into tabular format using the headings notes, page, questions/comments, and concepts/index. The *notes* contained information from each of the judicial reports, without any interpretation. At times this information is recorded as a direct quotation. *Page* indicates where that information is found in the report, for easy referencing. *Questions/comments* were observations about the information, questions that arose from the information, and possible conclusions that could be made after reading the information. *Concepts/index* is a column that cross-references to a worksheet that gives examples of ideas and themes found in the judicial reports. For example, in health care, collaboration is an important concept. There were instances when the judicial report would speak to collaboration,

without using that term. In the Sinclair Inquest, Justice Sinclair (2000) described the preoperative conference attended by everyone, in every discipline, involved in a particular surgery, where the information about the patient, the diagnosis, and the proposed procedure could be discussed. Anyone at the conference could ask questions of anyone else. This was viewed as collaboration and noted as such.

In order to answer the research questions, particular information was recorded and organized separately. For example, in order to compare the administrative structure, organizational charts were reconstructed from the information found in the Dubin Report (Dubin et al., 1983) and the Sinclair Inquest Report (Sinclair, 2000).

Published Commentary

The *Canadian Nurse* and the *RNAO News* were read, and notes were taken and organized in tabular form. The headings on the table are details; report; problem definition; and assumptions, conjectures, opinions, and conclusions. *Details* included the source of the information, *report* was a short summary of what the writer said, and *problem definition* noted whether the author named or defined the problem in any way. For example, when talking about the possible causes of death, Dr. Marion McGee clearly identified system problems that may have contributed to the cause of death (Charbonneau, 1985). The column for 'assumptions, conjectures, opinions, and conclusions' was used to record any assumptions the author or reporter appeared to make, what conclusions were drawn, and what opinions were expressed and to identify any conjectures made. In the final column were recorded comments about the article. For example, Pipher (1984) concluded that one lesson nurses learned from the Grange

Commission is that nurses must take action when action is needed. The comment column records the observation that the nurses at WHSC had learned this lesson and took action.

Print Media

Given the vast quantity of print media, these news clippings were scanned quickly once for content and then read thoroughly and notes were made. To make sense of the newspaper clippings, the material was organized in tabular format using the headings date; news report; facts; conjecture, opinion, conclusion, and assumptions; problem defined as; and comments.

The *date* is the date of publication of the article, and the *news report* is a summary of the article. For example, Blatchford (1981) reported that TSCH administration were astonished by the charges against Nelles and that postmortem tests revealed that the children died by digoxin overdoses. The next column is for *facts*: who said what, or who did what and when. For example, in 1983 Pigg reported on the Dubin Report recommendations and noted that there were 98 recommendations; this is recorded in the fact column. The 'conjecture, opinion, conclusion, assumption' column, recorded what assumptions, opinions, conclusions, and conjectures the author of the article drew. For example, in the above-mentioned article by Blatchford, several assumptions were made: that murder was done, that RN Nelles was the murderer, and that digoxin overdose was the method of murder. The next column is a record of how the problem of unexpected infant deaths was defined. Blatchford defined the problem as murder by digoxin overdose. Thoughts and observations were recorded in the final column. For example, it was noted that, as Pigg (1981) wrote, it appears that the investigation into the deaths on

Wards 4A and 4B was sparked by a coincidence rather than anyone in administration noting a high number of deaths.

Chronology

Once all the data sources had been read and the information tabulated, a chronology of key events was developed. The primary source of information about the unexpected deaths was the judicial reports, which included details about the deaths of the children, who took notice of the deaths, and who reported to whom and when. The media and professional publications provided information about events that occurred after the news of the unexpected deaths became public knowledge. For example, the media provided the information about RN Nelles' preliminary hearing, the Dubin Report, and the calling of the Grange Commission. The media also provided information not contained in the reports themselves.

Identification of Milestone Events for Each Case

To answer the research questions, it was necessary to develop criteria that could be used to identify milestone events that led to the initiation of public inquiries in the two cases. A starting point for the development of these analytic criteria was a recent issue of *Frontiers of Health Services Management*, the journal of the Foundation of the American College of Healthcare Executives, which was devoted to the subject of executive mistakes. Hofmann (2002) pointed out that "differentiating between a clinical mistake and management error is not always easy; often they are inextricably intertwined" (p. 8). Hofmann defined a *sentinel administrative event* as "an unexpected occurrence involving major economic or noneconomic losses adversely affecting patients or others or having the potential of leading to serious negative consequences" (p. 10). Hofmann also gave

examples of sentinel events that are acts of omission and commission, and these are reproduced in Table 6.

Table 6

Examples of Acts of Omission and Commission

Omission	Commission
• Failure to anticipate significant factors affecting decisions • Failure to act promptly on changed conditions • Failure to consider all options • Failure to delegate and hold subordinates accountable • Failure to balance power interest • Failure to keep patient and corporate needs paramount • Failure to follow the law, economic principles, or prudent person rule • Failure to anticipate likely consequences • Failure to fulfill contractual commitments and obligations to employees • Failure to protect the assets of the corporation • Failure to lead where there are opportunities to improve the health of patients or the community	• Permitting decisions to be made without adequate analysis • Choosing political, not business solutions • Making economic decisions that harm clinical care and outcomes • Allocating limited resources without applying objective criteria • Withholding negative information from individuals with the right to know • Making selective use of facts with different audiences • Showing favoritism among the board, management, medical staff, and employees • Signing contracts that are not achievable • Condoning discrimination among patient types on the basis of source of payment, ethnicity, gender, or other inappropriate or illegal factors • Allowing a climate of male dominance to harm relationships between doctors and nurses, thus accelerating nurse turnover and poor patient care • Making high technology investments without addressing access problems

(Hofmann, 2002, p. 12)

These definitions and examples, drawn from expert administrative opinion, provided justification for a definition of milestone events in the context of this research. A milestone event as discussed in this research had one or more of the following characteristics:

- The event was discussed in one of the judicial reports (Dubin et al., 1983; Grange, 1984; Sinclair, 2000).
- There is evidence to illustrate the way in which the event contributed to how the problem was defined.
- There is evidence to illustrate the way in which responses defined the problem.
- The event involves communication about the problem.
- The event precipitated action by an individual or group.
- The event should or could have precipitated action or reaction by an individual or group (i.e., the event is an act of omission according to Hofmann's, 2002, definition).

The chronology for both cases was examined for events that met the criteria above. These events were extrapolated and compiled in an iterative fashion as the research questions were addressed for each case.

Limitations

The Judicial Reports

The Dubin Report (Dubin et al., 1983) was thorough and far reaching in its conclusions. The RNAO believed that the recommendations in this report covering the

practice of nursing were significant and needed to be implemented (RNAO, 1983). The mandate of the Dubin Review committee was to examine the administrative structure, policies and procedures, and quality of patient care as they were when the Order-in-Council was made in 1982. This meant that the committee did not examine or report on the functioning of the hospital as it was in 1980-1981 when the unexpected deaths occurred on Wards 4A and 4B. The Dubin Report noted that administrative changes had been made following the arrest of RN Nelles, but there is not enough detail provided to enable the reader to piece together the administrative structure of 1980-1981. However, it does provide some information about the events in Case I and gives some idea as to the functioning of the TSCH in 1980-1981.

The Grange Commission report (Grange, 1984) was limited in a number of ways. Justice Grange did not use names when describing the children's medical and nursing care or the resuscitation attempts of the children, or in citing who was responsible for the child's medical care or who was the child's nurse. In spite of the fact that Justice Grange did not name individuals, it appears to this writer that that he assumed that the children died as a result of deliberate digoxin overdose, administered by a nurse. Justice Grange accepted the validity of the procedure and the results of the digoxin testing, although he heard expert scientific evidence that the testing was not necessarily reliable or valid. Even though part of his mandate was to do so, Justice Grange did not hear evidence about the administration and management in the hospital and chose not to make recommendations about administration and management. As a result, there are gaps in contextual information for the events in Case I. For example, there was no mention of reporting structure, no comment about the experience of the nursing staff or physicians, and no

comment as to the working relationship between the nurses and other HCPs, including physicians. Another limitation of the report is that the qualifications of witnesses were not presented in the text of the report with the description of their evidence.

Professional Literature

It must be acknowledged that the professional literature analyzed for review in Case I focused almost exclusively on the criticisms of the Grange Commission report (Grange, 1984) and the treatment that registered nurses received at the Commission hearings and in the media (Charbonneau, 1984). Specifically, the literature noted limitations in digoxin testing procedures (Charbonneau, 1985; Hamilton, 1993) and presented other problems with the evidence given at the hearings (RNAO, 1987). RNAO wrote a critique of the Grange Commission report; this document included contextual information not available elsewhere, such as the turnover of nursing staff that occurred when the cardiology unit moved into Wards 4A and 4B (RNAO, 1987).

Similarly, in Case II the professional literature focused on nursing issues, such as administration not being responsive to the nurses' concerns. Despite these limitations, the professional literature made a valuable contribution to an overall understanding of events in the two cases.

Media Reports

Media reports in Case I were characterized by sensational and personal perceptions. For example, there was repeated reference to the 'murder' of the children from the time of RN Nelles' arrest until the release of the Grange Commission report (Grange, 1984). After RN Nelles' preliminary hearing, one headline in the *Toronto Star* read "Murder mystery remains" (Brehl & Corner, 1982). Most of the articles presented as

fact that the babies had been 'killed' by an overdose of digoxin, when this has never been proven. The media also tended to write about the demeanor and appearance of RN Nelles (Keddy, 1981; Tesher, 1982). Much of what was reported during the Grange Commission hearings tended to support the supposition that either RN Nelles or RN Trayner had perpetrated a crime (Cox, 1984). Only very occasionally did the media report facts not already found in the Dubin Report (Dubin et al., 1983) or the Grange Commission report, such as the names of the nurses who reported their concerns to the clinical nurse specialist (Cox, 1983a).

In Case II the media reporting was less speculative and generally provided factual information about who gave evidence and what that evidence was. Some of the reports centered on the parents' reaction to their child's death and what they thought about the inquest. Very seldom did the media provide information not reported in the Sinclair Inquest Report (Sinclair, 2000).

Comparison of Cases

The two cases were compared on the dimensions of: chronology, key individuals, reporting structure and communication, and milestone events. In each of the cases, there was a period of 9 to 10 months from the first death until decisive administrative action to address the problem. A comparison was done to identify any similarities in the process of defining the problem that went on during this period. For example, an obvious similarity is that in both cases nurses were the first to note that there was a problem and to bring it to the attention of persons in positions of formal authority. Administrative structures were compared to uncover similarities and differences that may have had an impact on how senior administration heard about the problem or dealt with it, and communications and

milestone events were compared in both cases, allowing for health policy implications to be drawn.

Summary

In this study a descriptive case study method was used to answer the "how" and "why" research questions posed. A chronology of both cases was constructed, using the three judicial reports, print media reports, and published professional literature. This chronology served as a credible and dependable database, enabling me to answer the research questions and to make comparisons between the two cases. The potential for replicability of the research and transferability of conclusions was enhanced by developing and documenting a series of procedural steps that could be repeated to confirm the results of this study or to conduct studies of similar cases in other contexts.

CHAPTER THREE

DESCRIPTION OF THE CONTEXT

Every event occurs within a context, and the environment has both direct and indirect effects on every situation. Administrative behavior occurs within a broad context of environmental factors, including normative expectations of the knowledge, skills, and behavior of others in similar positions. In this study the behavior of healthcare administrators in the two cases was evaluated using a framework that categorized executive mistakes as errors of omission and commission (Hofmann, 2002). The selection of Hoffman's framework as an analytical tool in this study placed an added responsibility upon the researcher because the framework incorporates implicit, normative expectations of administrative competence and accountability. Interpreting the facts of the two cases in terms of this evaluative dimension placed an added burden of objectivity upon the researcher. Therefore, this chapter begins with a discussion of hospital organization, structure, and expectations of health administrators during the period covered by these two cases.

Following this, the specific contextual factors of each case are presented in terms of the background events, the external environment, and the organizational environment. In Case I the background events included the opening of Wards 4A and 4B and unexpected deaths on other wards. In Case II the history of the pediatric cardiac surgical (PCS) program is presented. Factors in the external environment include government funding and the nursing shortage, and factors examined in the organizational environment of both cases include the administrative structure, changes in administrative structure, and capacity.

A Normative Context for Hospital Structure and Expectations of Administrators

It was important to assess to what extent administrative behavior at TSCH and WHSC was congruent with normative expectations about the roles and competence of health care administrators during the time that the two cases occurred. To make this assessment, a selection of health care administration textbooks published between the years 1960 and 1991 were reviewed. The books selected for review and the areas of content reviewed are summarized in sequence of their publication dates in Table 7. The review of these textbooks focused on hospital structure and the role and competency expectations of administrators.

Organizational Structure

The documented, official relationships of an organization are referred to as its *formal structure*. Early writings on management advocated the principle of *unity of command,* which means that an individual should report to only one superior. The concept of a *scalar chain* ensures "a direct line of this command from chief executive through successive supervisors and subordinates to worker" (Mintzberg, 1979b, p. 9). Within an organization, individuals are placed in groupings for reporting purposes. These groupings may be based on common functions or professional affiliations. However, as Mintzberg (1979a) pointed out, no single basis for groupings can account for all interdependencies, and each approach has strengths and shortcomings. Matrix structures were developed to achieve coordination or liaison between the separate functional or divisional units of organizations. There are two kinds of matrix structures: "a permanent form, where the interdependencies remain more-or-less stable and so, as a result, do the

Table 7

Books and Areas of Content Reviewed

Publication Date	Author	Title	Topic Areas
1960	Hamilton, J. A.	*Decision Making in Hospital Administration and Medical Care*	Executive management Hospital board Medical staff
1977	Rakich, J. S., Longest, B. B., & O'Donovan, T. R.	*Managing Health Care Organizations*	Structure of hospitals
1979	Mintzberg, H.	*The Structuring of Organizations*	Organizational structure
1981	Snook, I. D.	*Hospitals: What They Are and How They Work*	Hospital board Hospital administration Medical staff Hospital organization Quality assurance
1982	Spirn, S. Benfer, D. W.	*Issues in Health Care Management*	Hospital organization Matrix organization Evaluation of CEO Quality assurance Medical staff
1982	Veninga, R. L.	*The Human Side of Health Administration*	Organizational culture Communication Resolving organizational conflict Excellence in administration
1983	Shortell, S. M. Kaluzny, A. D.	*Health Care Management: Text in Organization Theory and Behavior*	Communication; organizational design Power and influence Manager's role Organizational performance Medical staff
1983	Charns, M. P. Schaefer, M. J.	*Health Care Organizations: A Model for Management*	Coordination
1984	Kovner, A. R.	*Really Trying: A Career Guide for the Health Services Manager*	Managers Medical staff
1990	Schulz, R. Johnson, A.	*Management of Hospitals and Health Services*	Organization CEO roles Hospital board Manager performance Management objectives Medical staff
1991	Haimann, T.	*Supervisory Management for Healthcare Organizations*	Legal aspects Committees Communication Organization

units and people in them; and a shifting form, geared to project work, where the interdependencies, the market units and the people in them shift frequently" (p. 171). Mintzberg further noted that matrix organizations are characterized by "delicate balances of power" (p. 170) and require that conflicts be resolved by "negotiation among equals rather than recourse to formal authority" and that "dispensing with the principle of unity of command creates relationships that require highly developed interpersonal skills and considerable tolerance for ambiguity" (p. 174). Because of the need for liaison and coordination, the use of matrix structures creates the need for smaller organizational units and more managers. The origins of hospital organizational structure are found in religious and military organizations. Hospital organization authoritarianism exists because of the need to adhere to certain standards and the desire to remain with familiar structures (Georgopoulos & Mann, 1982). Although a hospital board is ultimately responsible for the activities of all employees and physicians, the relationships of physicians with other health care professionals and hospital administrators within hospitals is an example of a longstanding matrix structure.

Hospital Boards

Hospitals are governed by a board, which is ultimately responsible for the functioning of the hospital and hires the chief administrator (Schulz & Johnson, 1990b). Boards have the "ultimate legal responsibility for quality of care to patients" (Haimann & Morgenstern, 1991, p. 143; see also Morlock & Nathanson, 1983; Schulz & Johnson, 1990b; Snook, 1981a). A board must "establish, maintain, and support, through the hospital's administration and medical staff, an ongoing quality assurance program that includes effective mechanisms for reviewing and evaluating patient care, as well as an

appropriate response to findings" (Joint Commission on Accreditation of Hospitals, 1982, p. 229). Boards must identify problems, determine the cause, implement action to eliminate the cause, monitor activity, and document (Joint Commission on Accreditation of Hospitals, 1982). In order to assess performance, a board must determine what is to be evaluated, set standards, set performance indicators, and react to and influence performance.

The hospital board is responsible to ensure that the medical staff is providing quality patient care. The board has "an obligation to purge the hospital of inadequate physicians" (Snook, 1981a, p. 28).

Hospital board membership. The hospital board is usually made up of individuals from the community. In the past, board membership excluded the CEO and physicians. During the 1970s, CEOs and physicians frequently became board members (Morlock & Nathanson, 1983).

The hospital board delegates authority to the CEO, who delegates to nonmedical department heads. The role of the CEO and hospital leadership is discussed in the section on the role expectations of the administrator.

Medical Staff

Hospital medical staff consists of physicians who are not employees, but who provide patient care within the hospital. Typically, neither the board nor the CEO has much influence over physicians because physicians are outside of the hospital administrative structure (Georgopoulos & Mann, 1982).

Medical staff organization. The board is held responsible for clinical outcomes of physicians practicing within the hospital. "There should be a single organized medical

staff that has overall responsibility for the quality of the professional services provided by individuals with clinical privileges as well as the responsibility of accounting therefor [sic] to the governing body" (Joint Commission on Accreditation of Health Care Organizations, 1989; as cited in Schulz & Johnson, 1990f, p. 164). Because of this accountability, hospital boards are influencing the "size, organization, and performance of . . . medical staff" (Prybil, 1980; as cited in Morlock & Nathanson, 1983, p. 266). The board is responsible to monitor the quality of care provided by medical staff, carefully select which physicians are given practice privileges, and intervene when a physician does not provide quality care (Haimann & Morgenstern, 1991).

During the 1970s there were changes to hospital administration, and the position of a salaried medical administrator, sometimes called the Chief of Staff, was added. Often the chief of medical staff enforces "medical staff bylaws, rules and regulations . . . [and] represents medical staff to the . . . board and to the CEO" (Morlock & Nathanson, 1983, p. 268). However, the medical staff organization is still outside of the hospital's organizational structure.

Supervision of medical staff: Peer review. Although the board has the ultimate responsibility for monitoring the quality of care delivered by physicians, carrying out this duty can be more difficult. Physicians are subject to peer surveillance and are held accountable, but how this occurs is not specified (Schulz & Johnson, 1990c). One of the problems is that physicians tend to equate supervision with medical school and will close ranks against outside criticism. "The traditional patient/physician relationship is still sacred and subject only to the surveillance of physicians on the medical staff through peer review procedures" (Schulz & Johnson, 1990e, p. 136).

Quality assurance (QA) programs measure and evaluate professional care against an accepted standard. The goal of QA programs is to change the behavior of professionals and improve the quality of care (Snook, 1981e). When there is a paid medical director position, this individual is responsible to evaluate the quality of patient care (Snook, 1981c). Management can assist in providing quality care by working with good physicians and exposing problems (Schulz & Johnson, 1990c). Chairs of medical departments are "accountable for all professional . . . activities within the department. . . . [They must] provide continuing surveillance of professional performance . . . [and] assure that the quality and appropriateness of patient care provided within the department are monitored and evaluated" (Schulz & Johnson, 1990f, p. 165). However, if the appointment of department heads is on a rotating basis, this prevents adequate supervision of subordinates' work and makes it difficult to hold the department head accountable (Kovner, 1984b). It is apparent that the quality of peer review has historically been variable, depending upon the structure and practice of the medical staff.

Medical staff relationships with hospital employees. The relationship between physicians and hospital employees has a direct effect on patient outcomes. When there is less tension between physicians and nurses, when physicians and nurses understand each other's roles, and when there is better coordination of care, patient outcomes are better (Scott & Shortell, 1983). Nurses and other professional staff expect to be viewed as colleagues rather than as subordinates (Schulz & Johnson, 1990c). Tensions can exist when medical staff attempt to increase their influence and when they prevent management from purging the hospital of incompetent physicians (Schulz & Johnson, 1990c; Shortell, 1982).

The Administrator, Hospital Board, and Medical Staff Triad

Three groups, the hospital board, the administrator(s), and the medical staff, have influence over each other. The importance of this triad was recognized long before the events in this study occurred. Case studies in hospital administration, published in 1960, focused on the conflicts that arise between the board, medical staff, and the CEO (Hamilton, 1960a, 1960b, 1960c, 1960d). These case studies examined issues such as conflicts over giving hospital privileges to an incompetent physician, the board's attempting to update medical bylaws, problems that arise because of the lack of formal ties between the board and medical staff; and communication problems between the CEO and medical staff (Hamilton, 1960b, 1960c, 1960d). Hamilton (1960e) used the term *curbstone cases* (p. 7) to describe instances that would require immediate administrative attention. One such instance might involve a physician's defying an order given by the CEO. By the early 1980s it was expected that the CEO would closely coordinate "with the board and medical staff in achieving and maintaining the required standards of medical performance" (Harvey, 1982, p. 251).

There are several reasons that this triad is an important concept. Although physicians are not typically employees of the hospital, and therefore outside of the hospital organizational structure, "physicians have substantial influence, arising from their exclusive control over diagnosis and treatment processes" (Munson & Zuckerman, 1983, p. 61). Policy development must maintain the "professional prerogatives of the physician and the integrity of the total organization" (Rakich, Longest, & O'Donovan, 1977, p. 194). Towards the end of the 20th century, medical staff had voting members on

the board (Snook, 1981d), and medical staff department heads became involved in making policy decisions (Schulz & Johnson, 1990f).

Certain tensions may arise within the triad. The most common tension occurs when administration becomes involved in clinical practice and clinicians become concerned with efficiency and effectiveness (Shortell, 1982). Kovner (1984b) noted that physicians might not always be aware when they are trespassing out of the medical domain and into the domain of administration. A second cause of conflict may occur if physicians want self-governance and administrators are expected to support that need (Snook, 1981b).

Interestingly, Kovner (1984b) pointed out that when in conflict, administrators should yield when physicians will not. This idea is at variance with research that demonstrated better patient outcomes when there were limits on physicians' activities. When there was the perception of high physician influence, the death rate was higher (Morlock & Nathanson, 1983; Shortell, 1982).

The Organizational Structure of Hospitals

Schulz and Johnson (1990e) suggested that there are four types of organizational structures. In the *functional* structure, labor "is divided into departments specialized by functional area" (p. 137). The second type of organizational structure is the *divisional*, in which hospital work is divided around medical departments, body organs or disease, or particular populations. Within divisional structures there is decentralized decision making, whereby each division has its own management structure and there is a clinical chief over all division activities. Another organizational structure is the *team*, in which a team of administrative, medical, and nursing heads make all decisions via consensus.

This is superseded by a *chief executive* model, which requires accountability by medical staff and nursing staff (Schulz & Johnson, 1990e).

Quality performance is best when there are regular interdepartmental meetings, department heads and medical staff are involved in decision making, there is less perceived physician autonomy, and there is medical participation on the board (Scott & Shortell, 1983).

Matrix Structure and Diffuse Accountability

When physicians are not part of the official hospital organizational structure, an informal adoption of the matrix organization occurs; that is, there is multiple responsibility for patient care (Kimberly, Leatt, & Shortell, 1983). One of the best examples of this informal matrix organization is that of the nurse-physician administration. Nurses are employees who are accountable to their supervisor within the traditional organizational chain of command. Nurses also take direct orders from physicians regarding the medical aspects of patient care and answer to physicians for the care provided (Morlock & Nathanson, 1983). Another example of dual authority matrix organizations is when the medical staff are under the direction of a medical director and organized into departments, but they also report directly to the hospital board.

In some hospitals a matrix organization may be overlaid onto the traditional organization in order to achieve better coordination. "Functional managers are in charge of their professional function, with an overlay of project managers who are responsible for the end product" (Haimann, 1991c, p. 133). The result is a traditional chain-of-command structure, but employees might answer to more than one supervisor (Haimann, 1991c). The purpose of matrix organizations is to achieve "a balance of power between

managers responsible for technical standards and those responsible for maintaining an adequate work flow" (Morlock & Nathanson, 1983, p. 255).

The main problem with matrix structures is that employees must take orders from more than one source and answer to more than one supervisor, which carries a high risk of conflict (Charns & Schaefer, 1983). This arrangement implies dual accountability by both supervisors, which violates the principle of unity of command. Another problem is the expense of matrix design; it requires more time for planning, and more administrative support is needed (Kimberly et al., 1983). Meilicke (1999) emphasized the technological complexity and high requirement for interdependence in health organizations, pointing out that there is "a need for high reliability because the cost of error is so high that extraordinary means must be taken to minimize mistakes" (p. 90). One means of assuring this high reliability is the professionalization of work groups, but the autonomy of professional groups does not absolve senior management of the moral and legal responsibility for the actions of their staff.

Role Expectations of Administrators

Mintzberg (1982) illuminated a number of roles that the CEO and other administrators fill during the performance of their work: figurehead, leader, liaison with outside individuals, monitor of what is going on within the organization, disseminator of information, spokesperson, entrepreneur, disturbance handler, resource allocator, and negotiator (Kovner, 1984a; Mintzberg, 1982). The work of the manager tends to be "at an unrelenting pace; . . . activities are characterized by brevity, variety, and discontinuity; . . . managers are strongly oriented to action and dislike reflective activities" (Mintzberg, 1982, p. 32). Managers prefer verbal communication and tend not to write information

down, and decision making and information processing occur within the manager's head (Mintzberg, 1982). Usually, the manager is working with "informal and soft data" (Morlock & Nathanson, 1983, p. 45). Employees expect that administrators will make quick and wise decisions and be aware of employees' needs (Snook, 1981b).

As health care delivery became more complex, the expert and positional power of the CEO increased, particularly during the 1970s. The CEO became part of the hospital board (Morlock & Nathanson, 1983), and control over resources shifted to management (Schulz & Johnson, 1990c).

Hospital Administrators and Medical Staff

The CEO of the hospital is expected to ensure the delivery of quality services; this includes monitoring physician activity and working with medical staff and the board in order to maintain "required standards of medical performance" (Harvey, 1982, p. 251). When necessary, administrators are expected to change physician behavior in order to improve practice. In addition, they are expected to motivate physicians to support hospital organizational goals (Schulz & Johnson, 1990f). When there is a "violation of law, of medical ethics or morals, or of the hospital rules and regulations" (Snook, 1981b, p. 33), the administrator must intervene and inform the board. In order to foster a good relationship between medical staff and the hospital administrator, there needs to be mutual respect, understanding and trust, and a willingness to learn from each other (Snook, 1981b).

Hospital Administrators and the Community

The CEO is expected to be responsive to the community in which the hospital functions (Harvey, 1982). In particular, the CEO is "to help move the organization to

meet the health needs of the community; . . . that is, to improve access to health services, improve quality of service, [and] contain costs" (Schulz & Johnson, 1990a, p. 109). Hamilton (1960b) presented a case in which a physician was doing unnecessary surgery and a supposed RN was discovered to be an LPN. The emphasis in this case study is on protecting the community as defined by patients and their interests.

The Administrator's Responsibility for Creating a Moral Climate

The administrator is described as the conscience of the organization. The administrators are responsible for ensuring the principles of autonomy, beneficence, nonmaleficence, and justice. It is important that managers are "supported with an overriding and consistent personal values-driven leadership" (Schulz & Johnson, 1990d, p. 319); for example, the servant-leader model.

Hamilton (1960a) emphasized the need for moral leadership by CEOs in his case-study text. One of the case studies involved an administrator who wanted to ensure that ethical practices were being followed in the process of delivery care; for example, by telling the truth about a diagnosis to a patient and not overcharging for services.

Administrators and Responsiveness

One of the "curbstone cases" that Hamilton (1960a) presented as requiring immediate administrative attention concerned the rising death rate of newborns in a hospital. Hamilton's conclusion is that a real rise in the death rate or even a suspicion of an increase in the death rate requires immediate administrative response and intervention. Veninga (1982a) more recently pointed out that when administrators ignore problems and needs of the organization, they become "less and less able to creatively respond to the needs of constituents" (p. 51).

Administrators and Monitoring Processes

As previously noted, physicians expect to have their activities reviewed by their peers and not by administrators. However, the board is ultimately responsible for quality of care. None of the textbooks reviewed provided detailed evidence as to how the peer process works or what administrators should do if it does not work. However, all stressed the need to monitor outcomes, although the specifics for assessing patient care were not detailed. Schulz and Johnson (1990a) suggested that critical success factors be adopted; if these factors are being met, then the organization is working well.

Administrative Competence

In the mid 1980s several authors of textbooks discussed the skills needed to become a competent manager: the ability to control structure and process, develop well-functioning teams, link executives to constituents, articulate values and direct communication, and increase physicians' and nurses' participation in decision making (Scott & Shortell, 1983). Competent administrators "think in terms of the interests and needs of consumers" (Veninga, 1982c, p. 12) and create healthy work environments characterized by a sense of "belonging, respect, and achievement" (p. 13).

Administrators need to coordinate both physicians and employed staff and include these people in decisions that have an effect on job satisfaction. (Schulz & Johnson, 1990c). It is also important that administrators be able to solve conflicts within departments that might include many staff, because conflicts affect the delivery of patient care (Veninga, 1982b).

Coordination and cooperation may be enhanced when committees are used to make decisions. The administrator must take care in considering the committee

composition and size, and the committee members must know its scope of authority. The drawback of committee work includes the amount of time required, the costs, and decisions being made out of politeness or because one faction dominates another (Haimann, 1991a).

Communication is a vital skill for administrators. They may have problems with communication with subordinates caused by stereotyping, suspicion, a lack of understanding of professional values and processes, and the use of professional jargon. Status differences and contradictory nonverbal cues also interfere with communication (Veninga, 1982b). Communication moves in four directions: downward, usually directive; upward, the reporting of actions; horizontal, across departments; and diagonal, from one level of one department to another level in another department (Haimann, 1991b).

Although much of administrative communication is verbal, researchers also stressed the importance of written communication. Written words have formality that is often lacking in oral communication, provide a permanent record and evidence, and are usually more accurate (Haimann, 1991b). Kovner (1984b) stressed the need for a written file when dealing with physician complaints to protect the administrator. Finally, written communication is a good way to spread information to many people (Haimann, 1991b).

In summary, this review of textbooks and related literature has presented a normative context for understanding the structure of hospitals and the expectations of administrators' behavior and competence for the period during which the two cases investigated in this study occurred. The findings of this review confirm the applicability

of Hoffman's framework for evaluating administrative errors as an appropriate analytical tool for this study.

Background Events

Toronto Hospital for Sick Children

The events that are the subject of the Grange Commission (Grange, 1984) started on June 30, 1980, with the death of Laura Woodcock and ended with the death of Justin Cook on March 22, 1981. During this nine-month period, 36 children died suddenly. Four became the focus of a murder investigation, and all were the subject of two government initiated reviews, presided over by a judge: the Dubin Report (Dubin et al., 1983) and the Grange Commission (Grange, 1984). Although the events surrounding the deaths of the 36 children received the most media attention, there were several background events at TSCH, including unexpected death and illness of children on wards other than 4A and 4B. The events that happened before, during, and after the nine-month period examined in this study are summarized in Table 8.

Table 8

Background Events at Toronto Sick Children's Hospital

Date	Event
February 1980	Steven Yuz died from debilitated state (Dubin et al., 1983)*
June 30, 1980	Death of Laura Woodcock (Dubin et al., 1983; Grange, 1984)**
July 1 1980 - March 22, 1981	Unexpected deaths of 35 children on Ward 4A/B** (Dubin et al., 1983; Grange, 1984)
October 1981	Death of Rafiki Cruise from asphyxia after a bronchoscopy* (Dubin et al., 1983)
January 1982	Unexplained illness of neonates, some of whom received an accidental dose of adrenalin in place of Vitamin E* (Dubin et al., 1983; Brehl & Corner, 1982)
January 1982	Death of Jonathon Murphy from an accidental dose of adrenalin in place of Vitamin E* (Dubin et al., 1983)

* These events became subjects of the Dubin Report (Dubin et al., 1983).
**These events became subjects of both the Dubin Report (Dubin et al., 1983) and the Grange Commission (Grange, 1984).

Winnipeg Health Science Centre

The Sinclair Inquest Report (Sinclair, 2000) examined the deaths of 12 children who underwent cardiac surgery in 1994. The first death occurred in March 1994, and the last occurred nine months later, in December 1994. These deaths were not the only sign of trouble within the PCS program. Errors that occurred during the surgical procedures of other children were documented, and many children had difficult recoveries (Sinclair, 2000).

The PCS program had a troubled history. Events and problems similar to those investigated by the Sinclair Inquest (Sinclair, 2000) had occurred in the past. Of particular importance is the fact that the surgeon who left in 1993 did so because of

concerns that the number of cases was not sufficient to maintain his skills. He was also concerned about the high number of anesthetists involved in the program and the fact that postoperative care took place in two ICUs, when he believed that the children would receive better care if postoperative care was consolidated in one ICU. Justice Sinclair detailed the errors and omissions made in the recruitment of Dr. Odim, the surgeon who performed all operations during the period of the study. The history of the PCS program is summarized in Table 9.

The External Environment

External factors that influenced the events in the two cases occurred outside of the hospitals and were beyond the control of the hospitals. A summary of factors that influenced the external environment is found in Table 10.

Government Funding

Case I: Toronto Sick Children's Hospital

There is no direct information to indicate that government funding for TSCH was a problem. In the Dubin Report, Dubin et al. (1983) commented that there were "budgetary restraints" (p. 82) when speaking of the number of house staff. Whether there were similar restraints felt in other departments was not mentioned. However, Campbell (1984) stated, "In Ontario, severe restraint in health care spending has been practiced for almost a decade now. Nursing is organized so that it absorbs more than its share of cost constraint" (p. 27). Specifically, Campbell argued that fiscal restraint had a direct impact on how nurses at TSCH were able to organize their work.

Table 9

The History of the Pediatric Cardiac Surgical Program at WHSC

Date	Event
1979	Pediatric cardiologist stops referring patients to the pediatric cardiac surgeon because of poor outcomes
Unknown	Recruitment and tenure of another pediatric cardiac surgeon
1983	Pediatric cardiologist stops referring patients to the pediatric cardiac surgeon and does not want the surgeon to do surgery at WHSC
1986	New pediatric cardiac surgeon arrives
1993	Two out of four pediatric cardiologists leave Winnipeg
1993	Pediatric cardiac surgeon leaves for professional reasons
1993	Senior pediatric cardiologist resigns
February 1994	Dr. Odim begins tenure as pediatric cardiac surgeon
March 1994 – December 1994	Twelve PCS patients die; many others experience difficulties during recovery
May 1994	PCS anesthetists unilaterally withdraw services due to poor outcomes
May 1994	Wiseman Committee formed to address the problems in the PCS program; the committee meets weekly
December 1994	The PCS program suspended pending an external review
January 1995	PCS program external review
February 1995	Press release announcing the suspension of the PCS program

(Sinclair, 2000)

Table 10

Summary of the External Environment

External Environment	TSCH	WHSC
Government funding	Some budgetary restraint (Dubin et al., 1983) "Severe restraint in health care spending" (Campbell, 1984, p. 27).	APM group to find $10 million in savings (Sinclair, 2000)
Nursing shortage	Inexperienced nurses and new graduates hired (RNAO, 1987) RN Susan Nelles hired October 1979 (Munch, 1984)	None

Although neither the Dubin Report (Dubin et al., 1983) nor the Grange Commission report (Grange, 1984) spoke to funding as a problem for nursing, it is apparent that there were budgetary constraints that had a direct effect on nurses' ability to adequately care for their patients.

Case II: Winnipeg Health Science Centre

In the 1990s the Government of Manitoba wanted to reduce health care costs. In order to facilitate this, it hired American Patient Management Group to do a review of several of Winnipeg's hospitals, including WHSC. The review was expected to find $10 million in savings, mostly from changing job descriptions or eliminating positions. Funding was also a problem in recruiting a pediatric cardiac surgeon, because the fee-for-service amounts paid did not reflect the complexity of the procedures (Sinclair, 2000).

Nursing Shortage

Case I: Toronto Sick Children's Hospital

In the early 1980s there was a shortage of nurses. When the cardiac nursing unit moved locations, many of the experienced nurses left, and new graduates and nurses with little or no pediatric and/or cardiac experience were hired in their place (RNAO, 1987). Even though there was a shortage of nurses, Wards 4A and 4B were considered overstaffed during the time of these events (Dubin et al., 1983).

One of the proposed solutions to stop the high number of deaths on Wards 4A and 4B was the formation of an intermediate ICU. Staff nurses opposed this solution because the efficacy of such a unit depended upon having experienced nurses, proper equipment and increased medical coverage. The nurses did not believe that a new unit would have these attributes (Symes, Kiteley, & McIntyre, 1983).

Case II: Winnipeg Health Science Centre

There is no evidence that a shortage of nurses existed in 1994 or that a nursing shortage had any effect on the events at WHSC. The nurses involved in the PCS program had many years of experience (Sinclair, 2000).

The Organizational Environment

Administrative Structure

Each hospital had an administrative structure in place to operate the institution in an effective and efficient manner. The board, following the provincial government's legislation and regulations and the hospital bylaws, set up the administrative structure (Dubin et al., 1983), which determined who reported to whom and who was responsible for what. It also provided a framework for communication patterns.

Case I: Toronto Sick Children's Hospital

Dubin et al. (1983) provided an overview of the administrative structure of TSCH as it existed in 1982 and noted that this was a different structure from the one in place during the events of 1980-1981. Telephone and fax inquiries were made to TSCH Archives (now closed) for information about the administrative structure of TSCH in 1980-1981. A telephone response from the TSCH public affairs office reported that neither the TSCH administration nor the archives has a copy of the 1980-1981 administrative structure (J. Finjan, personal communication, March 19, 2003). The same inquiry was sent by e-mail to the RNAO, which also has no record of the administrative structure of TSCH in 1980-1981 (L. Grovestine, personal communication, January 10, 2003). Because it was beyond the scope of this study to conduct interviews, it was not possible to determine the administrative structure of TSCH in 1980-1981.

Some attributes of the administrative structure are known. A hospital board oversaw administration, executive administrative positions included the Executive Director and the Administrator, and a portfolio structure organized the delivery of patient care. A *portfolio* is the grouping together of one kind of service under one leader. Medical portfolios included pediatrics and surgery; pediatricians and surgeons reported to their respective department heads. The Dubin Report (Dubin et al., 1983) mentioned a Department of Nursing and a Director of Nursing (DON). Just how the nursing department fit into the overall structure is uncertain. According to the RNAO (1987), the highest nursing official was the Associate Administrator, Nursing, and this position was "three administrative levels from senior management" (p. 17). Each ward had its own head nurse, but to whom the head nurses reported is unknown.

Case II: Winnipeg Health Science Centre

At the beginning of the events in Winnipeg the hospital had a portfolio structure. A Board of Trustees governed WHSC and hired a President and Chief Executive Officer to oversee the running of the hospital. Reporting to the President were Vice Presidents (VPs), all responsible for various portfolios. There were VPs of Medicine and Nursing. Medicine was divided into various departments, such as anesthesia, pediatrics, and surgery, each with a Department Head. Nursing was divided into divisions, such as surgical nursing and pediatric nursing, each with a Nursing Director. The various nursing units had a Head Nurse. The administrative structure is presented in tabular format in Appendix D.

Change in Administrative Structure

Case I: Toronto Sick Children's Hospital

There were no changes in the administrative structure during the events of 1980-1981. The changes occurred afterwards, and the Dubin Review committee (Dubin et al., 1983) recommended further changes in its report.

Winnipeg Hospital for Sick Children

On June 1, 1994, the administrative structure changed from a portfolio system to that of program management. Fewer VPs were now responsible for both clinical and nonclinical programs instead of for particular portfolios. The idea behind the reorganization was to set up teams to manage the various programs. Each program team had three members who reported to the same VP. Thus, the Director of Patient Services (Pediatrics and Child Health Service Division), a nurse, and the medical head of the Department of Pediatrics and Child Health reported to the VP responsible for pediatrics

and child health. Previously, the nurse would have reported to the VP Nursing and the physician to the VP Medicine (Sinclair, 2000). Justice Sinclair did not state whether the responsibility and accountability for the functioning of this team were equally spread among the team members.

Capacity

For the purposes of this study, *capacity* refers to the ability to care for patients, whether in a particular ward or unit or in the hospital as a whole. This includes the number of beds and number of health professionals available and the adequacy of support services needed for effective patient care, such as the laboratory and pharmacy. Capacity also refers to the ability to handle patients with complex needs and conditions.

Case I: Toronto Sick Children's Hospital

During the time of the events on Wards 4A and 4B, TSCH expanded its clinical services. The effects of the clinical expansion on support services were not considered, and the support services did not expand to meet the increased demand. Planning did not appear to account for costs, staffing, space, and essential equipment. For example, often laboratory procedures necessary for the diagnosis and treatment of patients could be accomplished only if other important tasks were left undone (Dubin et al., 1983).

As previously noted, the nursing shortage meant that nurses and new graduates filled positions for which they had no previous experience or expertise. Further, many medical residents also were not experienced in caring for children (Dubin et al., 1983). Under these medical circumstances, Wards 4A and 4B admitted patients with "very complex heart malfunctions [who were] gravely ill" (p. 130). There is some evidence and belief that the patients on Wards 4A and 4B were sicker than those previously admitted to

the former ward on the fifth floor (Grange, 1984; RNAO, 1987). Justice Grange noted that the physicians believed that the children admitted to the ward were "younger and sicker" (Grange, 1984, p. 9). However, statistical analysis by Dr. R. B. Haynes and Mrs. D. W. Taylor of McMaster University refuted this belief (Grange, 1984). The nurses themselves believed that the children admitted to Wards 4A and 4B were "younger and sicker" (RNAO, 1987, p. 5).

Case II: Winnipeg Health Science Centre

The PCS program was shut down in June 1993 when the only surgeon left for another position. Dr. Odim arrived to assume the responsibility for the PCS program in February 1994. From the time that Dr. Odim performed his first surgical procedure, the PCS program worked at full capacity, performing complex open-heart procedures rather than beginning with simple closed-heart procedures and slowly adding more complex surgical cases (Sinclair, 2000). The capacity of the PCS team to perform proficiently was not adequately tested before offering services under Dr. Odim's direction. A summary of the factors shaping the organizational environment is presented in Table 11.

Summary

Certain environmental factors exerted influence on the events that occurred at TSCH and WHSC. One of the primary environmental factors that influenced the events at TSCH was the shortage of nurses experienced in pediatric cardiology after the cardiology unit moved from one ward into two renovated, adjoining wards. There was no nursing leadership position in either the senior or executive administration. During the time that the events occurred at WHSC, the provincial government severely cut health care funding, there was a change in the administrative structure, and there was no testing of

the PCS team's ability to work proficiently after a nine-month shutdown and the hiring of Dr. Odim.

Table 11

Factors Shaping the Organizational Environment

Factors	TSCH	WHSC
Administrative structure	Portfolio system No nurse in senior administration	Portfolio system VP Nursing VP Medicine
Changes to administrative structure	None	Moved to Program system VPs held responsibility for -programs. VP nursing eliminated VP medicine eliminated Director of Nursing now Director of Patient Services Head Nurse now Unit Manager
Capacity	Loss of experienced nurses Residents with little pediatric experience	Retained experienced registered nurses in PICU, NICU and the OR Inexperienced pediatric cardiac surgeon Only the junior cardiologist remained at start of PCS program PCS program resumed full capacity, with no phase in of more complex surgery

CHAPTER FOUR

PRESENTATION OF THE FINDINGS

In this chapter the findings from the analysis of data from the judicial reports, professional literature, and media articles are presented. The findings for each question are reported under the headings applicable to the data. The findings for the first three questions are reported in the section on the initial identification and reporting of deaths as unexpected under the three headings of chronology of milestone events, recognition and reporting; and discussion. The findings for question 4 are reported in the section on administrative responses to the initial reporting under the headings of chronology of milestone events and discussion. The findings for question 5 are presented in the section on the later reporting of concerns and administrative responses under the headings of chronology of milestone events and discussion. The findings for question 6 are reported in the section on communication processes under the headings of similarities and differences in the chronology of milestone communication events, reporting structure, communication and outcomes (or administrative behavior), and discussion. The findings for question 7 are presented in the section on the similarities and differences in the chronology of events under the headings of similarities in chronology and differences in chronology. The findings for question 8 are presented in the section on the milestone events leading to the initiation of public inquiries and are discussed under six major themes. The final research question, which considers the policy and administrative implications that can be drawn the study of these two cases, is the subject of Chapter Five.

Where feasible, the findings are presented in tabular format to enable the reader to follow the path to the conclusions drawn from the data. In some instances the tables are large and interrupt the flow of discussion. In these cases examples are given and the tables are presented as an appendix to enable readers or other researchers to confirm the conclusions presented.

Initial Identification and Reporting of Deaths as Unexpected (Research Questions 1-3)

The findings for the initial identification and reporting of deaths as unexpected are considered under three categories: chronology of milestone events, recognition and reporting, and discussion.

Chronology of Milestone Events

In this report of the study, the discussion of the chronology has been limited to the milestone events. As stated in Chapter Two, milestone events are those that meet the following criteria:

- the event is the subject of the proceeding conducted by a judge;
- the event illustrates the way that the problem was defined;
- the event describes communication about the problem; and
- and the event precipitates action or should have precipitated action.

Case I: Toronto Sick Children's Hospital

Using the retrospective analytical procedures developed for this study, it was possible to determine that in both cases staff nurses labeled the deaths as deviations from the expected norm within the first two months of the time periods examined in this research. Given that the children were seriously ill, their deaths were unexpected because

of their timing or because they occurred suddenly. Therefore, it was after several sudden deaths had occurred that the trend in the unusual number became apparent by the end of July 1980. The RNs became aware that the number of deaths on Wards 4A and 4B was much higher than they had previously experienced. The average number of deaths for the cardiology ward over the previous five years had been less than one a month (Dubin et al., 1983; Grange, 1984). The RNs reflected upon their own practice, concerned that an increase in the number of children's deaths was the result of something that they might have done or failed to do. The nurses reported their concerns to the clinical nurse specialist (CNS) at the end of July 1980 after six deaths and again at the end of August 1980 after an additional five deaths. At the same time, the nurses reported their concerns about the number of deaths to the nursing administration and physicians (Dubin et al., 1983; Grange, 1984).

It is apparent from the reports (Dubin et al., 1983; Grange, 1984) that the nurses reported their concerns verbally. There was no evidence that communication was written or received or that unusual incident reports were completed.

At the end of July 1980, Heather Dawson, mother of one of the deceased children, requested a Coroner's investigation into the death of her child, Amber. Amber had experienced digoxin toxicity requiring hospitalization and treatment before her last admission, and Ms. Dawson was concerned that her daughter had died because of a drug error. She wanted assurance that Amber had not died from a digoxin overdose and specifically requested that a pathologist outside of TSCH do the autopsy (Grange, 1984).

Towards the end of August 1980 there was a growing awareness by the nurses that most of the deaths were occurring on Ward 4A at a time when children having a

similar condition were surviving on Ward 4B. There is some discrepancy between the Dubin Report (Dubin et al., 1983) and the Grange Commission report (Grange, 1984) regarding when this awareness occurred. According to the Dubin Report, the nurses were aware of this by the end of the summer of 1980, whereas Justice Grange dated this much later in the chronology and noted that the physicians were not aware of this fact (Grange, 1984). These events are summarized in Table 12.

Table 12

Sequence and Time Period for Identification of Infant Deaths as Deviations for TSCH and WHSC

Month	Date	Events at TSCH*	Date	Events at WHSC**
1	July 1980	Six children died suddenly and unexpectedly (including one on June 30). The nurses sought assistance from the CNS. Heather Dawson expressed concern that the cause of Amber's death might be from digoxin toxicity and requested that the autopsy be done outside of TSCH.	March 1994	Two children died postoperatively. Nurses identified problems in the OR. PICU nurses determined that children were arriving in worse condition than expected and previously experienced, and identified longer patient stays.
2	Aug. 1980	Five children died suddenly and unexpectedly. The nurses sought assistance from the CNS and expressed their concerns to nursing and medical administrative officials.	April 1994	A third child died after undergoing a second surgical procedure. OR and PICU nurses reported their concerns to their respective head nurses and DONs.

* Grange (1984)
**Sinclair (2000)

Case II: Winnipeg Health Science Centre

In Case II the RNs identified problems from the time that Dr. Odim first performed surgery. The OR nurses observed Dr. Odim having difficulty performing basic surgical procedures. For example, he often experienced problems with cannulation of the aorta, a procedure basic to cardiac surgery. In cannulation "tiny catheters used to connect the patient's heart to lines (or tubes) . . . are connected to the cardiopulmonary bypass machine, . . . [and] the surgeon [is required] to insert the cannula into the major blood vessels" (Sinclair, 2000, p. 66). They noted that cross-clamp and bypass times were longer than normal. The OR nurses also observed highly unusual incidents during operative procedures. For example, during the surgical procedure of Vinay Goyal, Dr. Odim dribbled adrenalin directly onto the heart muscle, forcefully injected normal saline into the heart, and removed the aortic cannula without the required notification to the anesthetist and perfusionist. Based on their knowledge, judgment, previous experience, and direct observation, the OR nurses believed that both the surgeon's performance and the surgical outcomes were poor (Sinclair, 2000)

Nurses in the Pediatric Intensive Care Unit (PICU), where children were cared for while recovering from surgery, identified the children's postoperative condition as much worse then they had expected or previously experienced. The unit and staff were not expecting, and were not prepared to care for, children who arrived postoperatively in the unit with open chests, bleeding excessively, and whose heart pacing wires had fallen out. The PICU nurses, who would not normally have been involved in surgical procedures, also were concerned about Dr. Odim's unspoken expectation that they would assist in procedures for which they had no experience and no education, such as weaning a child

from ECMO, a type of bypass machine. Dr. Odim also assumed that certain surgical instruments and supplies were kept in PICU, and he would ask for these items in times of crisis. This lack of supplies and equipment, coupled with the PICU nurses' inexperience in assisting with surgical procedures, contributed to some of the poor outcomes (Sinclair, 2000).

The nurses in the OR and PICU believed that the first three deaths and the technical problems seen in the OR were a result of less than optimal surgical techniques by the pediatric cardiac surgeon. The nurses formally reported their observations to the head nurse(s), the nursing director for pediatric health (DON), and the medical Section Head, Pediatric Surgery, after the third child died in mid April 1994. The reporting was done verbally. There is no evidence that the nurses recorded their observations in a written letter or memo or in unusual incident reports. Justice Sinclair (2000) noted that many of these problems should have been recorded on the patient chart, but were not.

Justice Sinclair (2000) noted that 'incident reports' should have been completed after unusual incidents occurred in the OR and Intensive Care Units (ICUs). An *incident* was defined in the WHSC policies as

> a patient care-related or non-patient care-related event which . . . is normally not anticipated under usual circumstances and may adversely affect patient care, the provision of service or the assets or reputation of the centre; or . . . has the potential to result in litigation. (p. 94)

An example of an unusual incident would be when a clamp came off a major line, causing massive bleeding and contributing to a child's death. Several unusual incidents occurring during Vinay Goyal's surgery also should have been reported on an incident report. The incident reports are formal documents that are required to be formally

addressed by administration and would have provided written documentation of the problems that the nurses and anesthetists had observed.

After the third death the nurses discussed keeping a personal record of incidents and problems that occurred in the OR to protect themselves in the event of a potential lawsuit. The nurses did keep personal notes, and these became evidence at the Sinclair Inquest (Sinclair, 2000).

One major difference between Case I and Case II is the fact that one group of physicians, the PCS program anesthetists, made the same observations as the nurses did and raised these concerns with their Section and Department Heads. Informally, the anesthetists reported their observations to the Section Head, Pediatric Surgery. The sequence and time periods of events in which the number of infant deaths were initially identified as deviations are summarized in Table 12.

Recognition and Reporting

When there are problems experienced in a clinical unit, there is a reporting structure to which staff nurses, as employees, are expected to adhere. They are expected to report to their immediate supervisor, who is either expected to address the problem or communicate it to the next level of management in the administrative structure. Upward communications would be expected to occur until the problem is addressed. When patient concerns arise, the nurses are expected, in the context of their professional roles, to report the problem to the responsible physicians. Nurses in both cases followed these standard reporting and communication practices.

In both cases certain individuals became central. Unfortunately, one of the deficiencies in the Dubin Report (Dubin et al., 1983) and the Grange Commission report

(Grange, 1984) is that the names and often the positions of the people involved in the events as they happened were not recorded. Some of these names were provided in the media reports, but many were not mentioned in any of the sources consulted. More detailed information is available for Case II. Justice Sinclair (2000) clearly identified key individuals by name and position. A complete list of individuals named in the data and in this report is found in Appendix C.

Case I: Toronto Hospital for Sick Children

The staff nurses verbally reported their concerns to nursing administration and to physicians, including Dr. Rowe, Director, Division of Cardiology. Only the media recorded some of the names of the registered nurses who reported concerns about the increase in the number of deaths. These are RN Trayner and RN Nelles, who had reported their concerns to the CNS, RN Browne (Cox, 1983a; Munch, 1983). There is no record of the names or positions of administrators to whom the nurses reported, with the exception of Dr. Rowe, Director, Division of Cardiology. The names of the Head Nurses and the CNS are listed as witnesses in the Grange Commission report (Grange, 1984), but they are not specifically identified as being the nursing administrative officials to whom the staff nurses expressed concerns. It would be a reasonable assumption that the nurses reported their concerns to these individuals. Justice Grange mentioned 'nursing supervisors' who worked the evening and night shifts, but their names were not recorded in the judicial reports or in the media. There is no record of Ward 4A and 4B nurses reporting or discussing their concerns about the children's deaths with the nursing supervisors. There is no evidence that the nurses reported observations or expressed concerns in writing (Dubin et al., 1983; Grange, 1984).

Heather Dawson, the mother of a deceased child, Amber Dawson, correctly reported her concerns to the coroner, Dr. Bunt (Grange, 1984).

The Dubin Report (Dubin et al., 1983) pointed out that MAC and the Quality Assurance Committee (QAC) should have received reports about the high number of deaths, but this did not happen, and there is no record of why this omission occurred. A possible reason that the deaths were not reported is that the physicians believed that the deaths resulted from natural causes, and the high number was simply an anomaly (Grange, 1984). Table 13 provides a summary of the key individuals who reported and received information and includes the names of the Head Nurses.

Table 13

Individuals Reporting and Receiving Reports of Deviations in Patient Outcomes at TSCH

Individuals who identified deviations	Individuals who received reports of perceived deviations	Timing
RN Nelles** RN Trayner, team leader** Staff nurses, verbal	Carol Brown RN,** Clinical Nurse Specialist	End of July 1980 and again at the end of August 1980
Staff nurses, unnamed, verbal	Nursing administration RN Radojewski, Head Nurse Ward 4A RN Costello, Head Nurse Ward 4B Physicians in Cardiology Dr. Rowe, Director of Cardiac Services	Ongoing, to the end of August 1980

* Grange (1984), unless otherwise noted
**Cox (1983b); Munch (1983)

Case II: Winnipeg Health Science Centre

The OR nurses verbally reported their concerns to the OR Head Nurse and then to the DON. They also reported their concerns to the Section Head, Pediatric Surgery, believing that he had responsibility for and authority over the PCS program. The anesthetists reported their concerns to the Department Head, Anesthesia, and to the Section Head, Pediatric Surgery. Although it would have been expected that such concerns would be reported to MAC by these medical officials, no concerns were reported to this committee. After the third death several nurses in the OR discussed making personal notes about unusual incidents to protect themselves in the event of possible lawsuits. Evidence presented in the Sinclair Inquest Report (Sinclair, 2000) indicated that they did so. From the data it is evident that several nurses and two anesthetists reported their observations to a number of individuals in positions of formal authority. The reporting and communications processes in Case II are summarized in Table 14.

Two key individuals are missing from this summary. There is no evidence that anyone discussed their concerns about the poor surgical outcomes or the other problems that they had experienced directly with Dr. Odim. The acting Head Nurse, PICU, RN Feser, did talk to Dr. Odim and requested from him a list of OR equipment and supplies that he needed to have available in PICU. The other person missing from this summary is Dr. Odim's immediate supervisor, Dr. Unruh, Section Head, Cardiovascular-Thoracic (CVT) Surgery. It appears that none of the nurses, physicians, or medical section heads realized that Dr. Unruh, in his capacity as Section Head, CVT surgery, was Dr. Odim's supervisor.

Table 14

Individuals Reporting and Receiving Reports of Deviations in Patient Outcomes at WHSC

Individuals who identified deviations	Individuals who received reports of perceived deviations	Timing
RN Youngson, Charge nurse, cardiac surgery, verbal	RN Dixon, Head Nurse, OR RN Boyle, DON	Month 2, after third death, April 1994
RN Hinam, Anesthetic Nurse, verbal	RN Boyle, DON Dr. Wiseman, Section Head, Pediatric Surgery	Month 2, after third death, April 1994
RN Borton, Variety Children's Heart Centre**	Dr. Giddins, acting Section Head, Pediatric Cardiology	Month 2, after third death, April 1994
"Several individuals,"*** no names or positions given, verbal	Dr Wiseman, Section Head, Pediatric Surgery	Month 2, after third death, April 1994
Dr. MacNeill, Anesthetist, Subsection Head PCS program, verbal	Dr. Wiseman, Section Head, Pediatric Surgery Dr. Ullyot, Section Head, Pediatric Anesthesia Dr. Craig, Department: Anesthesia Head	Month 2, April 1994
Dr. Swartz MD, Anesthetist, verbal	Dr. Ullyot, Section Head, Pediatric Anesthesia Dr. Craig, Department: Anesthesia Head	Month 2, April 1994
Dr. Ullyot, Section Head, Pediatric Anesthesia, verbal	Dr. Wiseman, Section Head, Pediatric Surgery	Month 2, April 1994
Dr. Craig, Department of Anesthesia Head, verbal	Dr. Ullyot, Section Head: Pediatric Anesthesia Dr. Blanchard, Department Head, Surgery	Month 2, after meeting with Drs. MacNeill and Swartz, April 1994

*Sinclair (2000), unless otherwise noted
**Paul (1996)
***Sinclair (2000, p. 206)

WHSC had a portfolio organizational structure at the beginning of these events. In this structure, the nurses reported to nursing administrators and the anesthetists reported to medical administrators. The nurses also reported their observations to at least one physician whom they believed to have some responsibility and authority for the PCS program. This was Dr. Wiseman, Section Head, Pediatric Surgery. In actuality, this position had no official responsibility for the PCS program (Sinclair, 2000).

Discussion

In each of the two cases nurses correctly identified and reported their observations of important problems to persons in positions of formal responsibility and authority. In Case II the anesthetists had concerns similar to those of the nurses, and reported their observations to physicians in positions of formal responsibility and authority.

Case I: Toronto Sick Children's Hospital

In Case I the nurses believed that the sharp increase in deaths was a signal that something was wrong, whereas the physicians concluded that the deaths were from natural causes and simply a statistical anomaly. No one conducted an investigation in an attempt to gather further information that might have revealed a reason for the sudden increase in the number of deaths. Instead, the physicians accepted the deaths as normal without any explicit evidence. The nurses had no power to initiate an investigation independently. Although the people immediately involved in these events were cognizant of the fact that the number of deaths was extremely high, there is no evidence that anyone else within the hospital knew about the deaths. The Dubin Report (Dubin et al., 1983) noted that senior administration and MAC did not receive any notification about the increase in the number of deaths and expressed concern that this was so. The report also

noted that there was no systematic tracking of patient outcomes. There is no evidence that the nurses documented their concerns formally in writing. A parent's specific request to the coroner for an independent autopsy and drug screening was not honored.

Case II: Winnipeg Health Science Centre

Staff nurses working in the OR and PICU identified many problems, including poor surgical outcomes. These problems were reported to persons in positions of formal authority and responsibility several times in an attempt to elicit some intervention to improve the situation. No one responded to these concerns. Justice Sinclair (2000) concluded that these reports were not taken seriously simply because nurses were not held in esteem by the medical administration.

As in Case I, there is no evidence that the nurses documented their concerns in writing to hospital administration. Justice Sinclair (2000) was critical of the fact that many of the problems identified and reported were not documented on the patients' charts and/or on incident report forms. Chart documentation recording objective data and observations would have provided additional evidence to support the nurses' and anesthetists' claims. Completed incident reports would have provided structured written documentation of events that would have undergone administrative review and might have resulted in a formal response from administration. No one reported the concerns to MAC or to the VPs of Nursing and Medicine. The anesthetists identified the problems experienced within the PCS program and reported these concerns to physicians in formal positions of responsibility and authority.

In both cases the nurses reported their concerns to nursing administration and to physicians whom they believed could help improve the situation as soon as it was

apparent that potentially serious problems existed. In Case I the nurses identified the problem as a sharp increase in unexpected and sudden deaths and reported their concerns as soon as the trend became apparent to them at the end of July 1980, after approximately seven times the usual number of children had died. In Case II the nurses identified the surgical outcomes as less satisfactory than those they had previously experienced in similar cases and surgical circumstances. They also identified specific deficiencies in the new surgeon's skills. This occurred over several weeks as they observed both the surgeon's technique and the critical condition of the children postoperatively. After the third child died, the nurses reported their concerns. One major difference between the two cases is that in Case II the anesthetists also identified the poor surgical outcomes and reported their concerns regarding the surgeon's performance.

Administrative Responses to Initial Reporting (Research Question 4)

The nurses in both cases, and in Case II the anesthetists, reported their concerns with the expectation that those in formal positions of responsibility and authority would investigate the concerns and intervene to prevent further deaths from occurring. This did not happen. In the following section the responses from individuals in administrative positions are presented. The chronology of milestone events for each case is presented, followed by a discussion.

Chronology of Milestone Events

Case I: Toronto Sick Children's Hospital

Nursing and medical administration responded to the nurses' expressed concerns by holding two mortality and morbidity reviews in September 1980. There is no record of attendees at these reviews (Dubin et al., 1983; Grange, 1984). The reviews concluded that

the children's deaths were natural and not preventable. It was suggested that the children might have done better with monitoring and ventilation support, that resuscitation medications be reviewed to rule out a drug error, and that perhaps developing an Intermediate Intensive Care Unit would be appropriate (Dubin et al., 1983; Grange, 1984). No one initiated an investigation, requested better monitoring equipment, or initiated the development of a proposal for an Intermediate Intensive Care Unit. The definitive response started and ended with the Mortality and Morbidity rounds. The Dubin Report (Dubin et al., 1983) concluded that the high number of deaths should have been reported to medical committees, such as MAC, for investigation (Dubin et al., 1983). There was no reporting to any medical committees, nor did a report of the deaths go to senior and executive administrative officials.

The response to Ms. Dawson's concerns about her daughter Amber's death was to hold a Coroner's investigation, as she had requested. However, against the expressed wishes of Ms. Dawson, the autopsy was done at TSCH, and no drug screen was completed (Grange, 1984). Ms. Dawson's concerns about a medication error did not prompt physicians to consider this as a possible cause of Amber's death or of any of the other children's. Table 15 summarizes the administrative responses to the expressed concerns.

Case II: Winnipeg Health Science Centre

No one in a position of authority, either in nursing or in medicine, took any definitive action in response to concerns reported by nurses and anesthetists. The DON said that the nurses should give Dr. Odim the "benefit of the doubt" (Sinclair, 2000, p. 204). However, the DON did discuss the nurses' concerns with the Department Head

of Pediatrics and Child Health after the fourth death at the end of April 1994. No further action was reported in the data.

Table 15

Responses to Initial Recognition and Reporting

Toronto Hospital for Sick Children*		**Winnipeg Health Science Centre****	
Person responding	**Response**	**Person responding**	**Response**
Director, Division of Cardiology	Held Morbidity & Mortality Review of three deaths on September 5, 1980	Head Nurse, OR	Met with Section Head, Pediatric Surgery
Director, Division of Cardiology	Held second Morbidity & Mortality Review of three deaths on September 26, 1980	Director of Nursing	Instructed nurses to give Dr. Odim the "benefit of the doubt" (Sinclair, 2000, p. 204)
		Director of Nursing	Met with Department Head, Pediatrics at the end of April (This conversation may have occurred at a later date)
		Director of Nursing	Met with Section Head, Pediatric Surgery April 1994
		Section Head Pediatric Surgery	Assisted with surgical operation on April 15, 1994
		Department Heads, Surgery, Anesthesia & Pediatrics	Department Heads, Anesthesia, Pediatrics and Surgery had informal conversations

* Dubin (1983), Grange (1984)
**Sinclair (2000)

The Department Heads of Surgery, Anesthesia, and Pediatrics, who were directly or indirectly responsible for the PCS program, were all aware of the expressed concerns of frontline HCPs. The Department Heads were in positions of authority and responsibility and had the power and obligation to investigate concerns. Their response was to discuss the nurses' and anesthetists' concerns among themselves. The medical Department Heads believed that Dr. Odim was new and just learning and that things would settle down and improve over time. They also believed that the nurses were reacting emotionally to the deaths. Justice Sinclair (2000) also noted that the nurses were not held as credible simply because they were nurses. Therefore, their concerns were easily dismissed. The Section Head, Pediatric Surgery, scrubbed and assisted on a single operative procedure. Based on this single experience, he determined that there were no problems. No one in a position of responsibility and authority conducted any investigation (Sinclair, 2000).

No one reported these concerns to MAC. The DON and the Department Heads had direct reporting relationships to the VPs, Nursing and Medicine, but did not report the concerns regarding the PCS program at this time. These events are summarized in Table 15.

Discussion

In Case I, TSCH, there is no evidence that anyone besides the nurses believed that the deaths were out of the ordinary. No one in a position of administrative responsibility appeared to notice the timing of the deaths, that they were usually happening on only one of the wards, and that the deaths usually occurred when one particular team of nurses was

on duty. No one investigated or took any other action that may have prevented further deaths.

Specific requests by a parent, Ms. Dawson, were not honored, and an autopsy was performed on her child in a setting in which she had explicitly requested that it not be performed.

In Case II, WHSC, no one in a position of administrative responsibility responded in any definitive way to the reports of problems in the PCS program by several key people within the program. The medical Department Heads excused the poor surgical outcomes as part of a learning curve through which all new surgeons work and thought that any problems would resolve themselves. The dismissal of the nurses' concerns as an emotional reaction reflects the traditional belief that nurses do not have the knowledge and expertise to accurately assess the skill of a surgeon or to judge surgical outcomes.

In both cases the response from administrative officials was to minimize the seriousness of the concerns. No one in either case reported the problems to MAC or to any other committee. No one reported the concerns to persons at the executive level of administration. No investigations were conducted.

Later Reporting of Concerns and Administrative Responses (Research Question 5)

In Case I the higher than normal mortality rate continued until the time of RN Nelles' arrest. There were a few expressions of concern about mortality rate, and few responses from administrative officials. In Case II the PCS program continued to experience high mortality and morbidity rates. The nurses and anesthetists continued to

express their concerns, eliciting inadequate responses from medical and nursing administration.

Chronology of Milestone Events

Case I: Toronto Sick Children's Hospital

Using the master chronology developed to organize the raw data from the judicial reports, media articles, and professional literature, a shorter chronology chart was produced that focused on the communication and responses among hospital personnel after the September 1980 Mortality and Morbidity rounds. The nurses complained that physicians were not informing them about the gravity of the patients' conditions in October 1980 (Cox, 1983a). According to the Dubin Report (Dubin et al., 1983), more mortality reviews were conducted in the fall of 1980.

In December 1980 the Director, Division of CV Surgery, wrote a letter to the Director, Division of Cardiology, expressing his concerns about the number of children dying postoperatively after discharge from ICU, when they were expected to survive. This letter precipitated a formal chart review by several medical Directors, the DQN, other physicians, and senior nurses in January 1981. At this meeting approximately 20 charts were reviewed and the Review Committee determined that 6 were expected deaths and 14 were unexpected (Grange, 1984). This group decided that heart and respiratory monitoring might be of benefit, and they supported the nurses' request for increased residency support (Dubin et al., 1983). They also discussed the creation of an Intermediate ICU (Grange, 1984). According to Justice Grange, those present for this review were aware that most of the deaths occurred when at least one member of a particular nursing team was working. Thought was given to splitting this team up, but this

was not done. Requests for equipment and a new ICU went to the Program Advisory Committee in April 1981 (Dubin et al., 1983). A copy of the minutes of this meeting went to the Chief of Pediatrics and the Acting Administrator, but not to the Executive Director or the Board of Trustees.

No further communication occurred until the discovery of a high level of digoxin during an autopsy on Kevin Pacsai in mid March 1981. This finding precipitated the reporting of high digoxin levels found at the January 1981 autopsy of Janice Estrella. After this discovery all communication was among the physicians, who reported their finding(s) to senior hospital administration and coroners. Within a couple of days of the first two reports of high digoxin levels, another deceased child was found to have a high level of digoxin. The coroner requested the assistance of homicide detectives in the investigation, who suggested that the high digoxin levels were the result of foul play. When Justin Cook, the 36th child to die, was found to have died from digoxin toxicity, the investigation was turned over to the police. Justin's medical condition contraindicated the use of digoxin, and it was not prescribed for him. No one consulted or informed the staff nurses, although the Head Nurses knew about the police investigation. On March 25, 1981, RN Nelles was arrested and subsequently charged with the murder of four children. The police investigation continued until the end of the Grange Commission. No other arrests were made. A detailed summary of communication that occurred after the September Mortality and Morbidity rounds until the arrest of RN Nelles is found in Appendix E.

It should be noted that the number of children dying per month did decrease in the fall of 1980, but remained above the death rate experienced before July 1, 1980. Two

children died in September, three in October, one in November, five in December, two in January, and three in February. In March 1981, 10 children died, more than in any other month.

As in the first two months of these events, there was no written communication about the deaths, except for the letter written by the Director, Division of CV Surgery. No one completed any incident reports. These events and related communication between September 1980 and March 1981 are summarized in Table 16.

Case II: Winnipeg Health Science Centre

Unlike the events in Toronto, there was almost continuous communication about the problems that the PCS program was experiencing. Most of the communication detailed in the Sinclair Inquest Report (Sinclair, 2000) was among medical administration. There is very little evidence of communication initiated by the nurses, although they remained very concerned about the PCS program and outcomes and continued to express their concerns to nursing and medical administration (e.g., Sinclair, 2000, pp. 356, 375, 424-425).

In mid May, after five deaths, the anesthetists decided to withdraw services from the PCS program because of the morbidity and mortality, pending a review of the program. They wrote a memo to Dr. Wiseman, Section Head, Pediatric Surgery, that stated:

> We propose an immediate review of cases to date and the implementation of a mechanism whereby the structure and function of the Pediatric Cardiac Program can be developed in a continuous manner. The process should involve surgery, cardiology, anesthesia, nursing, intensive care and perfusion personnel. (Sinclair, 2000, p. 258)

Table 16

*Summary of Later Reporting Concerns and Administrative Responses at TSCH**

Date	Event, communication, and responses
September 1980 Month 3	• Two children died
October 1980 Month 4	• Three infants died • Nurses reported concerns that physicians were not informing them of the severity of patients' conditions to RN Brown, CNS (Cox, 1983a)
Fall 1980	• Mortality Reviews conducted throughout the fall (Dubin et al., 1983)
November 1980 Month 5	• One infant died
December 1980 Month 6	• Five infants died • Director, Division of CV surgery, wrote a letter to Director, Division of Cardiology, in which he expressed concerns about the mortality rate of children recovering from surgery
January 1981 Month 7	• Two children died • Mortality Review of ~ 20 deaths were conducted; recommendations were made, none implemented before the end of March 1981
March 1981 Month 9	• A total of 10 children died
March 16-18 (dates not certain) Month 9	• Pathologist reported high levels of digoxin found in Kevin Pacsai's blood during his autopsy. • 2nd pathologist reported high levels of digoxin found in Janice Estrella's blood during her January autopsy. • Coroner was informed • Digoxin was made a controlled drug by Chief of Pediatrics
March 21, 1981 Month 9	• Coroner reported high digoxin findings to homicide detectives, requested their assistance • Pathologists reported high levels of digoxin found in Allana Miller's blood during her autopsy
March 22, 1981	• Chief of Pediatrics issued memo stating nursing supervisors would give all meds on Ward 4A & 4B • Pathologist reported a high level of digoxin found in Justin Cook's blood during his autopsy. Digoxin not prescribed for Justin, and contraindicated for his medical condition • Investigative team relieved RN Trayner's nursing team of duty • Investigation became police matter
March 25, 1981	• Police interviewed each member of RN Trayner's team • RN Nelles arrested and subsequently charged with four murders.

*Grange (1984), unless otherwise noted.

Dr. McNeill, Sub-Section Head, PCS Anesthesia, gave evidence at the Sinclair Inquest that the anesthetists "didn't have confidence that there was an active process in place that was monitoring the program" (Sinclair, 2000, p. 259). Copies of the memo were sent to the Department Heads of Anesthesia and Surgery. The Department Head, Pediatrics, was informed of the anesthetists' actions by the Section Head, Pediatric Anesthesia.

The day the memo was sent, there was a meeting of the Department Heads of Anesthesia, Surgery, and Pediatrics; Section Heads of Pediatric Anesthesia and Pediatric Cardiology; and Dr. Odim. No nursing representative was present. At this meeting it was decided that an internal review be conducted, and the Wiseman Committee was formed. Justice Sinclair (2000) noted that the committee

> would review the cases that had been performed . . . and would also work to address the concerns of team members. What was not clear was how and when the committee was to report back, and to whom it was to report. (p. 263)

Membership on the committee included the Section Head, Pediatric Surgery, Dr. Wiseman, as chair; the pediatric cardiac surgeon; the Section Heads of NICU and Pediatric Cardiology; an OR nurse; and a perfusionist. PICU was not represented. There was no nursing representative from NICU and PICU. The DON was not involved. Justice Sinclair (2000) analyzed the notes made by Dr. Wiseman at the first meeting as follows:

> The notes reflected a view that there was nothing particularly wrong with the surgical outcomes. Rather, they suggest that a number of members of the team were seen to have unrealistic expectations and were unable to cope with the deaths of five children. As a result, they focused their hostility on the surgeon. . . . The review would not have any external input and would not examine questions of surgical competence because it appears [Dr.] Wiseman had concluded that competence was not an issue. This meant that the committee would not address the very question that had led to its establishment in the first place. (p. 267)

In response to the formation of the Wiseman Committee, the anesthetists agreed to provide services for low-risk cases; high-risk cases and neonates were sent out of the province to other centers.

There was no coordinated response from hospital administration to the anesthetists' withdrawal of services, and no impartial investigation. The VP Medicine was never informed of the problems in the PCS program, the anesthetists' action, or the formation of the Wiseman Committee. MAC was not informed about the problems within the PCS program (Sinclair, 2000).

The anesthetists were not the only ones with the idea to withdraw services. One of the OR nurses asked the OR Head Nurse if the nurses could refuse to scrub, and two other OR nurses asked not to be assigned to PCS cases. The requests were refused by the OR Head Nurse because there were not enough nurses to take their place (Sinclair, 2000).

Over the summer the Wiseman Committee met regularly. The meetings were marked by disagreements over which cases should be done at WHSC and conflict over resuming high-risk cases. Between May 17th and the beginning of September, two children died following surgery. There continued to be serious problems during surgery, especially with cannulation. In mid August Dr. Wiseman wrote an interim report suggesting that the program resume full capacity in six months. However, the committee had not addressed the mortality and morbidity rates, the long surgery times, and the poor repairs. Justice Sinclair (2000) remarked on Dr. McNeill's evidence, "Whenever a surgical matter [was] raised, she felt that [Dr.] Odim's view was invariably accepted and that there was little room for dissent, especially since no one at the table could match [Dr.] Odim's credentials" (p. 317).

At the September 7th meeting of the Wiseman Committee, a decision was made to resume doing high-risk cases, even though the nurses and anesthetists had serious reservations about doing so. Justice Sinclair (2000) wrote

> The cases had been reviewed, and while it was stated that a consensus had been arrived at, it would be more accurate to say that a dominant view had been imposed. . . . It appears that [Dr. Wiseman] interpreted the nurses' and anaesthetists' views as merely reflective of poor teamwork and their inability to deal with the deaths. (p. 324)

In September another child died, and several others experienced serious problems in the OR. Dr. Postl assumed the position of Department Head, Pediatrics, on September 15. At the end of the month Dr. Odim wrote a letter to the Department Head, Surgery, detailing his assessment of the PCS program and concerns that he had with the program and requesting that an outside review of the program be done. This memo was distributed to other Department Heads at the end of October 1994. There was never a formal response given to Dr. Odim.

After Dr. Postl was appointed Department Head, Pediatrics, in mid September 1994, he began to gather information and was disturbed by the high number of deaths. At the end of September he wrote to the DON requesting information about the nurses' concerns and to Dr. Wiseman requesting a copy of the case reviews done at Wiseman Committee meetings. As Dr. Postl gathered information, he became aware that the persons to whom the problems had been expressed had not addressed those problems (Sinclair, 2000).

The ninth death occurred in October, and there were two more deaths in November. By late fall medical administrators who had previously supported the PCS program and the surgeon began to doubt its efficacy. After the 11th death in November,

several of those involved in the surgery reported their concerns with intraoperative problems to the Department Heads of Anesthesia and Surgery and the acting Section Head, Pediatric Cardiology. The nurses expressed their concerns to the DON, who arranged a meeting with Dr. Postl, the Department Head, Pediatrics. There was still no definitive response from other Department Heads.

Shortly after Marietess Tena Capili's death, her parents attempted to meet with hospital officials to express their concerns about the death of their child, which had occurred in early September. Initially, they were put off because the autopsy report was not yet available. When the meeting did take place in November, only the acting Section Head, Pediatric Cardiology, was present. He told the family that their child had died from fluid in her lungs, when in fact the child had died from superior vena cava syndrome caused by the suturing of the superior vena cavas. Marietess's father questioned Dr. Odim's surgical abilities and was told by the cardiologist that Dr. Odim had trained in Boston and Montreal. The family did not receive the autopsy report until February 1995.

In December, after the 12th child died, key people withdrew their support from the program. One of the OR nurses told the DON that she could not do any more cases. The DON informed the Department Head, Pediatrics, that the nurses could not be asked to do any more cases before Christmas and that the ICUs were full. The Sub-Section Head, PCS Anesthesia, withdrew her services. The Section Head, NICU, told the Department Head, Pediatrics, that she would "have difficulty ethically referring a neonate for cardiac surgery" (Sinclair, 2000, p. 446). Dr. Postl, the Department Head, Pediatrics, called a meeting attended by the Section Heads of NICU, PICU, Pediatric Anesthesia, and Cardiology. This group made the decision to suspend the program pending an external

review. The Department Heads (more senior to Section Heads), Anesthesia and Surgery; the Section Head, Pediatric Surgery; and the DON did not attend this meeting.

In early 1995 two physicians from the TSCH performed an external review at the request of WHSC. In February, after the report from the external review committee was received and at a meeting of the CEO, Department Heads, the Deputy Minister of Health, and other officials, it was decided to temporarily suspend the PCS program while exploring options. No nursing representatives attended this meeting. WHSC issued a press release informing the public that the PCS program was closed because of problems with mortality and morbidity. The parents of the deceased children found out about the problems and program closure from the media and demanded answers. Within three weeks the Sinclair Inquest was called (Sinclair, 2000).

Throughout the later months, as these events took place, no one ever reported their concerns to the VP Medicine. Dr. Odim's direct supervisor was Dr. Unruh, Section Head, CVT Surgery, but he was not a member of the Wiseman Committee and was not involved in the suspension of the program in December. The DON provided evidence that she had reported the nurses' concerns to the VP Nursing in May 1994, but the VP gave evidence in the Sinclair Inquest that she did not remember hearing about the problems in the PCS program until September 1994.

The absence of nurses in these events was noted by Justice Sinclair (2000), who confirmed that the nurses had expressed their concerns to the appropriate people and with the formation of the Wiseman Committee had believed that their concerns would be addressed. However, the nurses' concerns were not addressed, and Justice Sinclair stated, "The nurses had been silenced by the review process" (p. 353). Evidence provided at the

Inquest indicated that the nurses continued to be deeply concerned about the surgical outcomes and expressed these concerns to nursing and medical administrative officials in the fall of 1994 (pp. 356, 375, 424-425). The nurses kept personal notes detailing the events and problems within the PCS program, but did not communicate their concerns in writing to the administrative officials.

Almost in the middle of these events, on June 1, 1994, WHSC underwent an organizational restructuring. The structure was changed from a portfolio system of reporting to a matrix or program structure. The VPs became responsible for various programs rather than for professional portfolios. The positions of VP Nursing and Medicine ceased to exist. Following the reorganization, the Department Heads of Surgery and Anesthesia reported to one VP, and the Department Head of Pediatrics and Child Health reported to another. The Director of Nursing, Pediatrics and Child Health, became the Director of Patient Services, Pediatrics and Child Health (Sinclair, 2000).

Three individuals—the Director of Patient Services, Pediatric and Child Health; the medical Department Head, Pediatrics and Child Health; and a Director of Support Services—formed a team to head the Pediatric and Child Health program. The Sinclair Inquest Report (Sinclair, 2000) did not provide information about the division of responsibility and authority among the Pediatric and Child Health program team members. When the reorganization occurred, Dr. Bishop left her position as Department Head, Pediatrics. This position was not filled on a permanent basis until the appointment of Dr. Postl, who assumed the position on September 15, 1994.

No incident reports were completed, although the nurses made personal notes about the problems, and the anesthetists did the same. Justice Sinclair (2000) commented

more than once that incident reports had not been completed and that there was no documentation on the patient charts about any of the problems that the nurses and anesthetists had observed or experienced. Justice Sinclair was critical of the Wiseman Committee, because formal minutes of the meetings were never kept. Notes made by Dr. Wiseman were the only written record of what happened at the meetings.

Table 17 provides a summary of events and communication that took place during months 3 through 9. Appendix F contains a more complete detail of the communications and events.

Discussion

In Case I three main issues arose in the last few months. No investigation was ever conducted to find the reason for the deaths, even though many of the deaths were considered unexpected, most of the deaths occurred on Ward 4A, and most of the deaths occurred when at least one member of one particular nursing team was working. The physicians and police readily accepted the process and results of digoxin testing as infallible. Once the police conjectured that the children had died as a result of foul play, the physicians accepted this conjecture, at the expense of a wider, more in-depth investigation. None of the medical committees with a legislated responsibility for such events was ever informed about the deaths. The executive administrators, who had a legal responsibility for patient care, were not informed about the deaths until March 1981.

In Case II no one in a position of authority and responsibility was willing to impartially investigate the performance of the pediatric cardiac surgeon and outcomes of the PCS program. Those who expressed their concerns either were told that they had no expertise to judge the surgeon and surgical outcomes or were placated by suggesting that

Table 17

*Summary of Later Reporting Concerns and Administrative Responses at WHSC**

Date	Event, communication, and responses
May 17, 1994	• The anesthetists withdrew their services from the PCS program because of mortality and morbidity problems.
May 1994	• The Department Heads met in response to the Anesthetists' action, and formed the Wiseman Committee. No independent, external review would be done. • No one informed the VP Medicine of either the anesthetists' actions or the formation of the Wiseman Committee. • VP of Nursing informed only of the formation of the Wiseman Committee. (This may have occurred in September).
Summer 1994	• Wiseman committee meetings held, characterized by disagreements between the surgeon and cardiologist on one hand and the anesthetists and nurses on the other.
September 1994	• Dr. Wiseman wrote a memo informing the Department Head, Surgery that the program was about to resume full capacity and that all procedures over the summer had gone well. In fact, two children had died.
September 1994	• The Pediatric Cardiac Surgeon wrote a letter to the Department Head, Surgery, in which he expressed concerns about the PCS program
September 1994	• The PCS program began performing high risk cases without consensus of all Wiseman Committee members
September 30, 1994	• The new Department Head for Pediatrics requested information about the nurses' and anesthetists' concerns. He requested copies of the case reviews done by the Wiseman Committee.
November 1994	• The family of a deceased child met with the cardiologist and requested information concerning their child's death and the questioned the surgeon's skill
November 1994	• Many people reported their concerns about the events of a surgical procedure that ended in the eleventh death
December 1994	• Circumstances surrounding the twelfth death resulted in key people withdrawing support from the program. • The DON informed the Department Head, Pediatrics that nurses would not do any more cases before Christmas. • Section Head, NICU informed Department Head, Pediatrics she could not ethically refer any more patients • The Sub-Section Head, PCS Anesthesia withdrew from the program.
January 1995	• External Review conducted by two physicians from TSCH.
February 1995	• The CEO, Department Heads, Deputy Minister of Health met and decided to suspend the program and investigate alternatives. • WHSC issued a press release stating the PCS program was closed

*Sinclair (2000)

the previous surgeon's performance had been no better when he first started. Administrative officials believed that the problems were only about emotions, communication, and interpersonal relationships and took no action to obtain further information. Justice Sinclair (2000) stated that the Wiseman Committee was a "debriefing and team building exercise . . . intended to appease the anaesthetists" (p. 270).

The membership in the Wiseman Committee formed to investigate the problems in the PCS program included the pediatric cardiac surgeon. This effectively silenced the nurses' and anesthetists' criticisms about the surgeon's competency. The agreement between the Wiseman Committee chair and the rest of the committee members, that no professional could address perceived problems outside of their expertise, effectively stopped the anesthetists and nurse(s) from expressing their concerns about the observed technical problems during surgery and the poor surgical outcomes.

No one reported their concerns to Dr. Odim's supervisor, the Section Head, CVT Surgery, Dr. Unruh. Dr. Unruh was not a member of the Wiseman Committee and was not involved in the December decision to suspend the PCS program. No one informed the VP of Medicine about the anesthetists' withdrawal of services. Dr. Blanchard, Department Head, Surgery, "testified that this was not the result of a conscious decision and acknowledged that it should have been done, if for no other reason than out of courtesy" (Sinclair, 2000, p. 264). The President did not become involved until after the program suspension in early 1995. As in Case I, no one reported the problems to MAC.

Summary

In Case I there was very little communication reported after the September Mortality and Morbidity rounds until the letter observing that there appeared to be a high number of children dying postoperatively, when they were expected to live. The review meeting in response to this letter found no reason for the deaths and made no immediate preventive changes in policy or procedures on Wards 4A and 4B. Once the high digoxin levels became known, all decision-making communication occurred among the physicians, excluding the nurses. The physicians appeared to quickly accept the cause of death(s) to be digoxin overdose and readily handed the investigation over to homicide detectives.

In Case II there was continuous communication, particularly among the medical administration. The medical Department Heads saw the Wiseman Committee as being the vehicle to solve the PCS program's problems, even though the terms of reference for the committee were not stated, and to whom the committee would report was not clear. After the 12th death, which was fraught with technical difficulties, several individuals indicated that they could no longer support or be a part of the PCS program. As a result, the program was suspended by Dr. Postl, Department Head, Pediatrics, at a meeting of Section Heads from NICU, PICU, and Pediatric Cardiology. After an external review commissioned by the Department Heads, the program remained shut to allow the hospital to explore alternatives for the program. There was extensive media coverage of the PCS program suspension, and the parents of the deceased children pressured politicians to conduct an inquiry. After consultation with the Minister of Justice, an inquest was ordered by the Chief Medical Examiner less than three weeks later. The PCS program

was never restarted at WHSC, and all pediatric cardiac patients requiring surgery are sent out of the province.

Communication Processes (Research Question 6)

The Dubin Report (Dubin et al., 1983) made six recommendations specific to communication. Justice Sinclair (2000) did not make recommendations specific to communication, but did identify the problems with communication at WHSC and the need for improved communication to resolve problems. Throughout the events in both cases, HCPs were communicating their concerns to administrative officials. The similarities and differences between the two cases are examined in more detail in this section. Whenever possible, the findings are presented in tabular format.

Similarities and Differences in the Chronology of Milestone Communication Events

When nurses have a concern about patient care, it is expected that they will report this concern to the appropriate nursing administrative personnel. In both cases nurses identified a problem with the infant deaths early in the course of events and reported this problem to nursing administrative officials and to physicians. In Case I the nurses were concerned about the sudden increase in the number of deaths and the efficacy of their own skills. In Case II the nurses and anesthetists were concerned about the efficacy of the pediatric cardiac surgeon and poor surgical outcomes, including deaths. In both cases there was formal, if ineffective, response to the expressed concerns, but no administrative investigations were initiated. The one difference in the communication was that in Case II the anesthetists communicated their concerns through the direct action of withdrawing their services.

In Case I, month 6, a medical administrative official formally communicated his concern about the unexpected postoperative deaths. In Case II, month 7, the pediatric cardiac surgeon formally communicated his concerns about the functioning of the PCS team to a senior medical administrator. In Case I administrative officials reviewed all of the deaths and made recommendations. In Case II Dr. Odim did not receive a formal response to his letter.

In both cases there was a flurry of communication in the final weeks that resulted in definitive action. In Case I the action was a police investigation. In Case II the PCS program was suspended. In both cases these actions solved the problem. In Case I the death rate returned to pre-July 1980 levels. In Case II, after the PCS program was closed, children needing cardiac surgery were referred out of the province.

Table 18 provides a summary of the similarities and differences in communication. 'Month 1' is the month recording the first death in both hospitals.

Reporting Structure

The hospital administrative structure determines the way in which concerns are reported. There was not enough evidence available to detail the administrative structure for TSCH, but there is enough evidence to make a few comparisons. For example, in both hospitals, and even after WHSC was restructured into a program-management organization, the nurses reported to nurses and physicians to physicians. The nurses in both cases also expressed their concerns to physicians when the problem involved patient care issues (Dubin et al., 1983; Sinclair, 2000).

Table 18

Summary of Similarities and Differences in Communication Processes

Month	Similarities	Differences
1	**Case I:** Nurses approached the CNS with concerns about the high number of deaths **Case II:** Nurses discussed concerns at meetings and/or with each other regarding problems experienced in the OR and PICU	
2	**Case I and II:** Nurses expressed concerns to nursing and medical administrative officials.	**Case I:** The nurses requested assistance because they questioned the efficacy of their nursing care. **Case II:** Nurses questioned the efficacy of the surgeon, not the care they (the nurses) provided.
3	In both cases, a formal review took place. **Case I:** Mortality and Morbidity Rounds were held to review deaths **Case II:** The Section Heads for Pediatric Surgery and Pediatric Cardiology reviewed the cases, later the Wiseman Committee was formed.	**Case II:** the anesthetists withdrew services because of their concerns and the lack of administrative response, which provoked administration into action. Physicians in Case I took no such action.
4 and 5		**Case I:** no formal communication **Case II:** Wiseman Committee met regularly
6		**Case I:** The Director of the Division of Cardiology wrote a letter, in which he expressed concern about the high number of deaths, to the Director for the Division of CV Surgery. **Case II:** Chair of Wiseman Committee wrote a memo, indicating the PSC program would be resuming high risk cases soon

(table continues)

Month	Similarities	Differences
7		**Case I:** Review of all deaths was conducted and the deaths were classified as expected and unexpected **Case II:** pediatric cardiac surgeon wrote letter in which he expressed his concerns. New Department Head of Pediatrics asked for information about the PCS program
8	No definitive action by administrative officials in either Case I or Case II.	**Case II:** Concerns continued to be expressed by nurses and anesthetists in the PCS program; Department Heads discussed problems at meetings.
9		**Case I:** Discovery of digoxin precipitated investigation by police
10		**Case II:** Concerns communicated to administrative officials resulted in the suspension of the program.

In both cases medical committees were available and mandated to address quality of patient care issues, particularly MAC. No one reported the concerns about mortality and morbidity to any medical committee in either case. Both hospitals had a process in place for written reporting of unusual incidents, and no one reported any unusual incident at either hospital. Neither hospital had a process in place to track outcomes (Dubin 1983; Sinclair, 2000).

There are differences also. WHSC changed its organizational structure from a portfolio structure to a matrix/program structure several months into the events of 1994. WHSC had a nurse and physician at the executive level of administration; TSCH did not. The coroner had been informed about some of the deaths at TSCH; the Chief Medical Examiner was not informed of the surgical deaths that occurred at WHSC.

Table 19 summarizes the similarities and differences in the reporting structures of THSC and WHSC.

Table 19

Similarities and Differences in Reporting Structures

Similarities	Differences
Both administrative structures were portfolio based	WHSC changed to a program administrative structure June 1, 1994
Nurses reported to other nurses in administration	TSCH did not have a nurse as part of Executive Administration
	WHSC had a VP Nursing until the administrative restructuring June 1, 1994
Physicians reported to physicians in administration	TSCH did not have a physician as part of Executive Administration
	WHSC had a VP Medicine until the administrative restructuring June 1, 1994
Nurses, both staff nurses and administrative officials, verbally reported their concerns to physicians in administrative posts.	TSCH reported some of the deaths to the medical examiner before the March events. In Winnipeg, the CME was not aware of the deaths or problems in the PCS program
Medical Committees existed to deal with these kinds of problems, but no one reported the problems to them	
Both hospitals had incident reporting systems that were not utilized	
Neither hospital had a way to track patient outcomes.	

Communication Processes

There were many similarities and differences in the communication processes. The key similarities in the communication processes are as follows:

- Nurses were prompt to report their observations and concerns about the deaths to appropriate administrative officials.
- People in positions of formal administrative authority did not respond to the concerns.
- Most observations and concerns were reported verbally.
- Incident reports were not completed.
- MAC was not advised of the problems in either of the hospitals.
- The final definitive action to solve the problems occurred very quickly.
- The decision to take definitive action was made by a group of physicians. In Case I it was reporting the deaths to the coroner, and in Case II the physicians suspended the program. Executive administrators were not involved in the definitive action.
- The evidence in the judicial reports indicated that at both hospitals the executive administrators were not informed of the problems and/or the extent of the problems.
- The process of problem definition in the two cases took place over a 9- to 10-month period. Problems were not structured or defined by executive management, or other administrative officials, as needing action, until the final month in each case.

The key differences in communication and decision-making process were as follows:

- In Case II there was evidence that the nurses continued to express their concerns to nursing and medical administrative officials. In Case I there was no evidence that this occurred.
- There was no evidence in Case I that the nurses expressed their concerns to the DON. In Case II the nurses and their managers expressed their concerns to the DON, and the DON reported these concerns to the VP Nursing.
- In Case II the anesthetists promptly reported their concerns to appropriate medical administrative officials.
- In Case II the communication between Department Heads continued throughout the latter months of the events. There is no evidence that this was true of Case I.

Table 20 presents more details of the similarities and differences in communication processes.

Discussion

There were several similarities in the communication processes in these two cases. No one utilized the avenues available to report the problems in writing. Incident reports were not completed, and the issues were not reported to MAC. In both cases people in positions of authority and responsibility did not address the concerns expressed by the nurses. Even as evidence validating the nurses' observations and reported concerns mounted with increasing numbers of deaths and complications, the medical administrative officials disbelieved the severity of the problem. Clinical (staff) nurses

Table 20

Summary of Similarities and Differences in Communication and Decision Processes Used

Similarities		**Differences**	
Toronto Hospital for Sick Children	Winnipeg Health Science Centre	Toronto Hospital for Sick Children	Winnipeg Health Science Centre
Nurses first identified and reported their concerns about the high number of unexpected deaths to: -CNS -Nursing administration -Physicians -Director, Division of Cardiology	Nurses first identified and reported their concerns about the new surgeon, problems in the OR, poor outcomes including death to: -OR Head Nurse -Section Head, Pediatric Surgery -DON	There is no record of the highest ranked person to whom staff nurses reported their concern No record of the DON's involvement until the January 1981 meeting.	OR staff nurse, in charge PCS and the anesthetic nurse reported concerns to the DON
The Dubin Report (Dubin et al., 1983) and Grange (1984) provide no evidence or written communication.	Reporting done verbally	No record of any physician reporting their concerns to medical administration early in the events.	Anesthetists reported concerns to Section Head, Pediatric Surgery about the same time the nurses reported their concerns. Anesthetists reported concerns to Department Head, Anesthesia
No one reported the sudden, sharp increase in unexpected deaths to any committee, including the Medical Advisory Committee. No one used incident reporting for the unexpected deaths	No one reported the sudden, sharp increase in unexpected deaths to any committee, including the Medical Advisory Committee. No one used incident reporting for the unusual events	The Chief of Pediatrics remained unaware of problems for some months.	The Department Head, Anesthesia had conversations with other Department Heads and Section Heads. No other action taken

(table continues)

Similarities		Differences	
Toronto Hospital for Sick Children	Winnipeg Health Science Centre	Toronto Hospital for Sick Children	Winnipeg Health Science Centre
Mortality and Morbidity rounds (2) involving nursing and medicine reviewed six cases in September 1980	Section Head, Pediatrics reviewed cases with the Section Head, Cardiology. No one else reviewed the cases.	Case reviews done by more than two people	Case reviews done by only two people
Formal action (letter from CV surgeon) drew formal attention to the problem	Formal action (anesthetists withdrew from program) drew formal attention to the problem	Formal action: letter from one Director to another questioning why the high number of unexpected deaths.	Formal action: anesthetists withdrew services from PCS program; communicated decision by memo to administration
Formal response was from midlevel medical administration, they reviewed and classified the deaths. Recommendations were made.	Formal response from senior and middle medical administrators was the formation of the Wiseman Committee	No ongoing meetings about the continuing deaths, except the physicians normal weekly reviews. No changes made in ward 4A & 4B	Wiseman Committee met weekly from May onward and into the fall. Slow down of the PCS program for about four months
No investigation was ever done to determine the cause(s) behind the deaths	No investigation was ever done to determine the validity of the nurses' and anesthetists' concerns, until late in the series of problems and deaths.		New Department Head, Pediatrics slowly gathered information and evidence about the nurses' and anesthetists' concerns through October to mid December. Requests made in writing.

(table continues)

Similarities		Differences	
Toronto Hospital for Sick Children	Winnipeg Health Science Centre	Toronto Hospital for Sick Children	Winnipeg Health Science Centre
After the discovery of high levels of digoxin was found, physicians met to determine a course of action and informed all staff.	After the two final deaths occurred, physicians met and decided to suspend the PCS program; informed all others involved.	The team experiencing most of the deaths did not receive any stress break. No evidence that any nurse wanted to leave ward 4A & 4B	After the final death, the DON cancelled booked procedures to give the nurses a break. Staff nurse withdrew from program.
Executive administration notified and involved only after discovery of digoxin and at the beginning of the coroner's investigation.	Executive and senior administration notified of decision to suspend the PCS program.	Deaths referred to coroner. Coroner involved homicide detectives in investigation.	Coroner not notified; hears about deaths from media. Investigation results in Inquest, police not ever involved.

were excluded from the meetings that decided upon the definitive action, and there is no record of participation or leadership or advocacy by senior or executive nurse administrators.

At the end of the events the problem in Case I was defined as 'murder,' and police were involved, even though there was no direct or explicit evidence to indicate that any nurse had deliberately given digoxin overdoses. In Case II the problem was defined as 'poor surgical outcomes,' even though explicit evidence demonstrated that the surgeon's skills were lacking.

Communication patterns were similar in both cases. Nurses expressed concerns to the appropriate people in positions of responsibility, but no one responded in any meaningful way. No one, including the nurses, documented their concerns in a formal manner. The formal responses from the administrative officials were less than satisfactory and did not include initiatives to seek additional or more complete information, which would confirm observations and enable the problem to be defined in more precise terms, or to initiate action.

In Case I the administration and police accused a single nurse of the deaths, on the assumption that the digoxin testing was accurate and that only a nurse could have administered the supposed digoxin overdose. In Case II no one directly accused the surgeon of incompetence, and police were never involved.

Similarities and Differences in Chronology of Events

Research Question 7

The previous section presented the similarities and differences in the communication processes utilized by HCPs in the two cases. In this section the events of

each case are compared. For ease of presentation, the similarities are presented first, followed by the differences.

Similarities in Chronology of Events

In general, the events themselves are similar. At both hospitals the concern was for the high number of deaths. The events took place over a space of less than a year, and both cases resulted in much publicity. Several key similarities are listed below. Table 21 presents the similarities in more detail.

- The events began in the context of a major change. In Case I the physical location of the cardiology unit was changed. At the same time, the unit lost many of its experienced nurses (RNAO, 1987). In Case II there was a change in pediatric cardiac surgeons, and the new surgeon had limited experience. WHSC also lost three out of four pediatric cardiologists (Sinclair, 2000).
- In both cases the administrative officials responded late in the events, and administrative responses did not include information seeking.
- In both cases a single death precipitated the final definitive actions. At TSCH finding the digoxin toxicity during an autopsy triggered a chain of events that ended with the arrest of RN Nelles. At WHSC dramatic problems experienced during the surgery of the 12th child who died caused key people within the program to withdraw their support and/or services, resulting in a decision by the Department Head, Pediatrics, and other Section Heads to suspend the program, pending an external review.

Table 21

Summary of Similarities in Chronology of Events

Similarity	TSCH	WHSC
Events occurred after a major change	The cardiac ward moved from a single ward on one floor to two adjoining wards on another, two months before the increase in deaths (Dubin et al., 1983) Loss of experienced nursing staff at time of move (RNAO, 1987).	Three out of four cardiologists resigned, as did the pediatric cardiac surgeon in 1992-1993. An inexperienced pediatric cardiac surgeon was recruited and began practice (Sinclair, 2000)
Nurses identified problem	Nurses identified the increase in the number of deaths as sudden and unexpected. The number of deaths far exceeded the previously experienced rate for that unit (Dubin et al., 1983; Grange, 1984).	Nurses identified problem(s) as high mortality and poor outcomes. They also identified technical problems intra-and-post-operatively such as failing monitoring lines, long cross-clamp and bypass times (Sinclair, 2000).
Medical administrative officials indicate they viewed the problems differently than the nurses.	Physicians believed deaths due from natural causes and the high number an anomaly. No investigation into cause of deaths (Dubin et al., 1983; Grange, 1984).	Medical administrative officials believed the mortality and morbidity to be similar to when the previous surgeon began his tenure. They also believed communication and interpersonal relationships were the problem. No investigation into the validity expressed concerns was conducted (Sinclair, 2000).
Health professionals involved in the events are similar	Health professionals included: staff nurses, head nurses, nursing administration, physicians, medical administrative officials (Dubin et al., 1983; Grange, 1984)	Health professionals included: staff nurses, nursing administrative officials, physicians, medical administrative officials (Sinclair, 2000).

(table continues)

Similarity	TSCH	WHSC
Interpersonal differences	Media reported that a witness gave evidence that RN Trayner and RN Nelles were "in conflict" (Brehl & Corner, 1982, p. B2).	Marked interpersonal conflicts and communication problems between Pediatric Cardiac Surgeon and the nurses and anesthetists (Sinclair, 2000).
A single death precipitates definitive action	Discovery of high levels of digoxin during an autopsy and the delayed reporting of another child's high digoxin level, led to digoxin testing on subsequent deaths and the conclusion that digoxin toxicity was the cause of the deaths (Dubin et al., 1983; Grange, 1984).	The twelfth death following a surgical procedure marred with technical problems caused several health care professionals to remove themselves from the PCS program or to say that they had reservations about referring any more patients (Sinclair, 2000).
Physicians met to decide on course of action; nurses excluded	Physicians made digoxin a controlled drug; coroner called in homicide detectives. Nursing administration informed of decisions and investigation.	Physicians' meeting excluded the Department Heads of Surgery and Anesthesia and Nursing. Decision was made to suspend PSC program pending external review.
Senior Administration knew almost nothing or nothing at all about the problems until shortly before definitive action and public awareness.	Acting Administrator informed of deaths two months before Nelles' arrest, and told the situation was being addressed. Acting Administrator and Executive Director part of the investigation meetings, before murder charge(s) laid (Dubin et al., 1983; Grange, 1984).	VP Nursing did not remember hearing about the problems until six months into Odim's tenure. VP Medicine not informed about problems or formation of Wiseman Committee VP responsible for Pediatrics informed about Wiseman Committee but not about the anesthetists' withdrawal of services. Did not know the severity of the problems until December.

(table continues)

Similarity	TSCH	WHSC
		CEO did not know about anesthetists' withdrawal or Wiseman Committee. CEO informed about the concern re: poor outcomes in December 1994. Uncovered program suspension when the request for funds for external review is submitted in January 1995 (Sinclair, 2000).
Parents of deceased children and the public informed about problems in the same manner.	Toronto media reported the arrest of RN on suspicion of murder, followed by reporting of the charges and investigation.	WHSC gave a press release simply saying the PCS program was suspended because of unsatisfactory outcomes (Sinclair, 2000).

- Executive administration either knew nothing about the problems or were given limited information until just before the final definitive action(s) took place.
- Executive administrative officials or senior medical managers did not provide leadership in problem definition or resolution.
- In both cases the parents of the deceased children and the public found out about the problem from the media.

Differences in the Chronology of Events

There are also some important differences between the two events. Key differences are listed below. Table 22 presents the differences in chronology in more detail.

Table 22

Summary of Differences in Chronology of Events

Differences	THSC	WHSC
The events began in a different manner	There was an abrupt increase in the number of unexpected deaths (Dubin et al., 1983; Grange, 1984).	Surgeon revealed his inexperience with technical aspects of pediatric cardiac surgery during first procedure. Nurses perceived surgeon's behavior as sexist and antagonizing. Concern centered on poor outcomes and intraoperative problems, not just deaths (Sinclair, 2000).
Nurses awareness of potential legal action	Nurses did not appear to realize potential for legal action.	Nurses documented events in personal notes to protect themselves from legal action and accusations (Sinclair, 2000).
Identification of problem	Problem defined as unexpected and sudden deaths of a large number of children Cause of deaths was unknown, presumed natural (Dubin et al., 1983; Grange, 1984)	Problem was defined by PCS program team members as a "who"—the pediatric cardiac surgeon. Medical administrative officials defined the problems with mortality and morbidity as part of learning; they defined the problem as one of communication and poor interpersonal relationships.
Resolution of problem	Police investigated; they believed the deaths occurred from deliberate overdose of digoxin and arrested RN Nelles to resolve problem. Number of deaths returned to pre-July 1980 numbers (Dubin et al., 1983; Grange, 1984)	External review occurred after the program was suspended Meeting of Department Heads, CEO, and Department of Health officials who decided to suspend the program for six months Press release to this effect was given to the media (Sinclair, 2000)

(table continues)

Differences	THSC	WHSC
Number of deaths and focus of concerns	Concerns focused on high number of deaths	Concern focused on ratio of deaths to surgical procedures and Concern also focused on poor outcomes, technical problems, increased length of stay in ICU
Groups of patients	Dead children included those waiting for diagnosis, waiting for surgery and post operative patients	All concerns centered on children who underwent surgery

- The events themselves are quite different and started in a dissimilar manner. In Case I the events were the sudden increase in the number of deaths occurring on the cardiology wards. In Case II the number of deaths and complications during and after procedures performed by a single surgeon was considered too high.
- In Case II the HCPs were also concerned about the morbidity of surviving children and technical problems experienced intra- and postoperatively.
- The nurses in Case II realized their vulnerability to legal action and took steps to protect themselves by keeping detailed, personal notes of the events as they occurred.
- In Case II WHSC underwent an organizational restructuring during month 4 of the events.
- The children involved in both cases had serious heart problems. However, in Case I the deceased children included those admitted for diagnosis, those waiting for surgery, and those recovering postoperatively. In Case II the

children all underwent cardiac surgery and died either during the procedure or shortly thereafter.

Although the actual events in the two hospitals were quite different and happened 13 years apart, the number of similarities is striking. Administrative officials did not respond to the nurses' observations and reported concerns and did not seek further information. Executive administrative officials did not know about the problems and/or the full extent of the problems until definitive action was taken by physicians. For example, in Case I the executive administrative officials did not know about the problems until the coroner and police became involved. In Case II the executive administrative officials did not know about the problems until the PCS program was suspended and a request was made for funding for the external review.

The differences reflect the nature of the events and the fact that physicians were involved in expressing similar concerns to those of the nurses in Case II. There are two important differences. The nurses in Case II prepared for potential legal action, having learned from the events in Case I (Sinclair, 2000); and the anesthetists withdrew their services when they did not receive an appropriate response to their concerns by the medical administrative officials.

Milestone Events Leading to the Initiation of the Public Inquiries (Research Question 8)

The presentation of findings up to this point has focused on the events and the responses and communication of those involved in the two cases. In Case I the media reported the arrest of RN Nelles for murder. In Case II the media reported that the PCS program was closed because of high mortality and morbidity rates. These media reports

elicited reactions from the parents of the dead children and the public, and, eventually, government initiated reviews occurred. The internal and external milestones resulted in the government initiated reviews instigated at the level of provincial governments.

Definition of Milestone Events

As previously discussed in Chapter Two and earlier in this chapter, a milestone event as discussed in this research had one or more of the following characteristics:

- The event is discussed in one of the judicial reports (Dubin et al., 1983; Grange, 1984; Sinclair, 2000).
- There is evidence to illustrate the way in which the event contributed to the way that the problem was defined.
- There is evidence to illustrate the way in which responses defined the problem
- The event involves communication about the problem.
- The event precipitated action by an individual or group.

Milestone events for the two cases are summarized in Table 23. To avoid repetition, the internal milestone events are presented under broad categories.

Registered Nurses Express Concerns

In both cases the registered nurses expressed their concerns about the deaths to the administrative officials. This is a milestone event because the nurses were the first to correctly identify the deaths as a problem that needed investigation to prevent further deaths.

In Case I the nurses realized that the number of deaths in July and August 1981 represented a significant increase from the number of deaths normally experienced on the cardiology ward and reported their concerns about this number to nursing and hospital

Table 23

Summary of Milestone Events

Toronto Sick Children's Hospital	Winnipeg Health Science Centre
Registered nurses express concerns	***Registered nurses express concerns***
• In months one and two, nurses identified a large increase in the number of deaths and report their concerns about this number to hospital administrative officials. • Did not express concerns formally in writing • Did not complete unusual incident reports	• Nurses reported concerns about the high mortality and morbidity rates and the technical problems observed and experienced intraoperatively in the second month of the events. • Nurses continued to report concerns until the program was suspended in month 10 • Did not express concerns formally in writing • Did not complete unusual incident reports
Physicians express concerns	***Physicians express concerns***
• In month six, one of the CV surgeons formally expressed his concerns to a senior medical administrative officer about the number of children dying postoperatively, when they were expected to survive. • No reports went to executive level administrators. • No reports to MAC or other medical committees	• In month two, anesthetists identified and reported concerns about the mortality and morbidity rates and technical problems to senior medical administrative officials • Continued to express concerns until the program was suspended in month 10 • Did not report concerns to VP Medicine, or later the VP responsible for pediatrics, surgery and/or anesthesia • Did not report concerns to MAC or other medical committees • Did not complete unusual incident reports
Hospital administrators acknowledge problem	***Hospital administrators acknowledge problem***
• In month three, medical administrative officials conducted two mortality and morbidity rounds • In month seven, medical administrative officials conducted a review of 20-22 deaths. Recommendations made. • In month 9 high digoxin levels were reported to the coroner • In month 9, coroner requests assistance of police • No internal hospital investigation was ever conducted to determine cause of the high number of deaths.	• In month three formed the Wiseman Committee in response to anesthetists' withdrawal of services • In month 10, suspended PCS program, pending an external review • In month 11, external review conducted • In month 12, closed the program to evaluate alternatives • Hospital administrative officials did not conduct an investigation • Hospital administrative officials did not respond to nurses' reports of problems

(table continues)

Toronto Sick Children's Hospital	Winnipeg Health Science Centre
• No examination or action was ever taken regarding the correlation of one nursing team and the deaths. • Hospital Administrators never acknowledged the severity of the problem before month nine	
Government-initiated reviews into sudden deaths	***Government initiated reviews into sudden deaths***
• Inquests into the deaths of some of the children • Police investigated some of the deaths thought to be murder	• All deaths were automatically referred to the Chief Medical Examiner's Office • In month 12, Chief Medical Examiner initiated investigation into the 12 deaths.
Parents of the deceased children	***Parents of the deceased children***
• In month one, a parent questioned the circumstances of the infant's death. Specific requests for external, independent autopsy ignored by coroner. • In month nine, media announced the arrest of RN Nelles for murder of four infants • In month 34 parents informed about Royal Commission from media announcing its proclamation.	• In month nine, the family of a deceased child sought answers to why their child had died; these were not provided • In month 12, parents informed about the closure of the PCS program from the media announcement
The judicial proceedings	***The judicial proceedings***
• In month 19, RN Nelles preliminary hearing begins • In month 24, the Dubin Review Committee formed by an Order-in-Council • In month 34, the Lt. Governor-in-Council appoints the Grange Commission	• In month 13 the Sinclair Inquest was called by Dr. P. Markesteyn, CME.

administration (Dubin et al., 1983; Grange, 1984). There was no evidence that the nurses continued to report their concerns. However, there was no evidence that they did not continue to report their concerns.

In Case II the nurses reported observations and concerns to nursing and medical administration after the third death. Their observations and concerns went beyond the deaths of the three children and encompassed morbidity of surviving children and

technical problems. The nurses continued to report to the appropriate administrative officials, both nursing and medical, until the program was suspended in December 1994 (Sinclair, 2000).

In both cases the nurses did not report their observations formally in writing and did not complete unusual incident reports.

Physicians Express Concerns

The physicians were also involved in expressing concerns about the number of deaths. In Case I this did not occur until later in the events, whereas in Case II it occurred about the same time that the nurses presented their concerns to the administrative officials. Physician reporting is a milestone event because it validated the nurses' concerns that there was a problem occurring that needed investigation and intervention.

In Case I there is no record that the physicians expressed concerns about the high number of deaths during the early months. Justice Grange (1984) noted that the physicians were aware of all the deaths because all deaths were reviewed weekly. In December, five months after the high number of deaths began, the Director, Division of CV Surgery, wrote a letter expressing concerns to his peer, the Director, Division of Cardiology. The letter noted that there were a high number of children dying postoperatively, when they were expected to survive (Grange, 1984). There was no evidence that this letter was copied to anyone else in the administrative structure.

In Case II the anesthetists identified problems with the PCS program's mortality and morbidity rates and with the abilities of the pediatric cardiac surgeon. Their concerns were expressed to the Section Head, Pediatric Anesthesia, and to the Department Head,

Anesthesia. The anesthetists continued to express their concerns to the medical administrative officials until the closure of the program in December 1994.

At neither hospital did the physicians report their concerns to the executive administrative officials. No one reported the concerns about the deaths to MAC or to any other medical committee.

Hospital Administrators Acknowledge Problem

In both cases the medical administrative officials responded to the physicians' expressions of concern in a formal matter. However, no investigation was conducted. The executive administrators were not informed or involved, and there was no evidence that they participated in defining or solving the problem.

In Case I, at TSCH, the physicians conducted mortality and morbidity reviews of 6 of the 10 deaths that occurred over the summer of 1980 in response to the nurses' concerns. The second formal response from the medical administrative officials was to conduct a review of the deaths that had occurred from July to December 1980. Of these deaths, 14 were considered to be unexpected (Grange, 1984).

The last response by the medical administrative officials to the deaths came in March 1981, after it was identified that a child died from digoxin toxicity. Shortly thereafter two more children died and were found to have high digoxin levels. At the same time, a pathologist reported finding a very high level of digoxin in the autopsy of a child who had died in January. These deaths were referred to the coroner, and the coroner enlisted the assistance of the police (Dubin et al., 1983; Grange, 1984).

The medical administrative officials did not investigate the cause of the children's deaths or the reason for the sudden increase in the number of deaths. The medical and

nursing administrative officials did not investigate the correlation between the deaths and the presence of one particular nursing team.

In Case II the medical administrative officials did not respond to the anesthetists' expressions of concern until the anesthetists withdrew their services. In response, the Wiseman Committee was formed, but this committee did not address the anesthetists' concerns or conduct an investigation.

The medical administrative officials responded definitively after the 12th death by suspending the program, pending an external review. Dr. Odim was informed of the program's closure and that when the program resumed, it would be with a different pediatric cardiac surgeon.

After the external review was completed, the hospital and medical administrative officials met with Manitoba's Department of Health officials and decided to investigate possible alternatives in providing a quality PCS program. There were no nursing representatives at this meeting. The media were provided with a press release saying that the program was closed because of high mortality and morbidity rates and that officials were considering alternatives for the program.

The hospital did not conduct an investigation into the mortality and morbidity rates of the PCS program. There was no evidence that the hospital administrative officials ever responded directly to the nurses' reported observations and concerns at any time.

Reviews Into Sudden Deaths

In both Ontario and Manitoba the children's deaths were eventually referred to the Coroner/Chief Medical Examiner (CME) for investigation. In Manitoba the Sinclair

Inquest resulted. In Ontario three separate proceedings took place, in addition to any inquests into the deaths of the children.

In Ontario all deaths occurring suddenly and unexpectedly are to be referred to the Coroner. The Coroner then has the power to determine whether an inquest is necessary (Dubin et al., 1983). Fourteen of the deaths in Case I were promptly referred to the Coroner's office. After the reporting of Kevin Pacsai's high digoxin levels, an additional 21 deaths were reported (Dubin et al., 1983). There is no record in the data used for this research that indicated the conclusions of this or any other inquest that may have been held.

After the reporting of Kevin Pacsai's high digoxin level, the Coroner reported the suspicious deaths to the Chief Coroner, and he in turn requested the assistance of the homicide detectives. After the reporting of the high digoxin level found at Justin Cook's autopsy on March 22, 1981, the police began an investigation.

In Manitoba, when a child dies, the death is referred to the Office of the CME, who then conducts an investigation. Pediatric deaths could be referred to the Children's Inquest Review Committee, who had the power to order an inquest. The CME also had the power to order an inquest without referring a case to the Review Committee. Inquests are held if "there were preventable aspects to a death and if the CME perceived a trend in deaths in a particular hospital or industry . . . to allay public concerns and make known the circumstances surrounding a death" (Sinclair, 2000, p. 97).

In Case II the CME's office relied almost exclusively on the surgeon's version of events and on the autopsy reports, which were "not available to the Chief Medical Examiner's Office in a timely manner" (Sinclair, 2000, p. 485). The CME's office had no

method of tracking the deaths. Therefore, the CME was not aware of the trend in the number of deaths in the PCS program. Justice Sinclair noted that none of the autopsy reports were completed within the time required by legislation (Sinclair, 2000). The pathologists conducting the autopsy also relied on information given by the surgeon and were not aware of the problems expressed by the anesthetists and nurses regarding the surgeon's skills and problems experienced in the OR (Sinclair, 2000).

The CME provided evidence that he discovered about the problems in the PCS program when he read the newspaper containing WHSC's press release. He then requested a review of the deaths by a medical expert, consulted with the Minister of Justice and officials, and called an inquest into all 12 deaths, less than three weeks after the public announcement that the PCS program had been suspended.

Parents of the Deceased Children

The parents of the deceased children were unaware of the problems that the hospitals were having with the high number of deaths in Case I and the high mortality and morbidity rates in Case II. In Case I there was no evidence that any of the deceased children's parents questioned physicians about the cause of their child's sudden and unexpected death, with the exception of Amber Dawson's mother. As previously noted, Ms. Dawson suspected that her child had died from digoxin toxicity. The autopsy was performed at THSC, and no drug screen was completed, in violation of Ms. Dawson's specific requests (Grange, 1984).

There was no evidence as to how the deceased children's parents were informed about the arrest of RN Nelles and the charges of murder against her. There was evidence

that the parents were not informed that a Royal Commission would be established before the public announcement (Speirs & Stead, 1983, p. 1).

Throughout the events in Case II, only one family questioned the circumstances surrounding their child's death. In November 1994 the family of Marietess Tena Capili requested a meeting with hospital officials to find the cause of her death. This child had had previous successful cardiac surgery. The family was not anticipating problems when Marietess had her final surgery and were shocked when the child returned to PICU in critical condition and then died. At the November meeting, which Dr. Odim did not attend, the pediatric cardiologist, Dr. Giddins, stated that she had died from fluid in her lungs. The autopsy report was not yet available. Justice Sinclair found that the cause of her death was from superior vena cava syndrome caused by suturing of both superior vena cavas, and ruled that it was a preventable death. The family also questioned the surgical abilities of Dr. Odim (Sinclair, 2000).

In Case II the parents of the deceased children received the news from the media that the PCS program had been shut down (Sinclair, 2000). The parents' requests for information and their demands for a public inquiry were part of the impetus for the Sinclair Inquest (Sinclair, 2000).

The Government-Initiated Proceedings

Because of the circumstances surrounding the deaths of these children, and because of the media attention, the public demanded answers. In each case the focus was on a single individual, RN Nelles in Toronto and Dr. Odim in Winnipeg. Government responses in the two cases were different.

In Case I there were several proceedings arising from the deaths of the children. As noted above, the children's deaths became Coroner's cases, and there is evidence that one of those resulted in an inquest (Grange, 1984).

Preliminary Hearing

There was a judicial preliminary hearing regarding the murder charges against RN Nelles. Judge Vanek ruled there was not enough evidence against RN Nelles to proceed to trial (Grange, 1984). After Judge Vanek's ruling, the government said that there would be no inquiry. The police continued their investigation during and after Nelles' preliminary hearing (McDowell & Carriere, 1982).

The Dubin Report

The media did not report the formation of the committee chaired by Justice Dubin that was to investigate the quality of administration and patient care at TSCH because of the deaths on Wards 4A and 4B, as well as three other deaths. The media announced the release of the Dubin Report (Dubin et al., 1983) with articles about the report and its highlights (Cox, 1983b; Pigg, 1983).

The Grange Commission

The media announced the appointment of Justice Grange to the Royal Commission on April 22, 1983 (Christie, 1983; Cox, 1983c). The intent of the commission was to "inquire into and report on . . . how and by what means children . . . died in Cardiac Wards 4A and 4B at [TSCH] between July 1st, 1980 and March 31st, 1981" (Grange, 1984, p. 2). Justice Grange submitted his report in 1984, attributed eight of the deaths to digoxin overdose, and categorized 15 as suspected digoxin overdose. In the Legislature, NDP leader Bob Rae wanted to know why so many babies had died

without the hospital administration being concerned (Ferri, 1985). This question was never answered.

In Case II, as previously noted, once the CME had heard about the closure of the PCS program because of high mortality and morbidity rates, he began his investigation (Sinclair, 2000). The media published articles asking questions about the situation. For example, one headline read, "It's time for some answers at HSC" (Sinclair, 1995b) and called for an inquiry (Carr, 1995). The media announced the Sinclair Inquest on March 3, 1995 (Sinclair, 1995a) and noted that the parents were calling for an inquiry rather than an inquest because an inquiry could find fault and assign blame (Khan, 1995). The report of the Sinclair Inquest was released on November 27, 2000. A detailed summary of the milestone events leading to public inquiries is found in Table 23.

Discussion

In both cases the nurses and physicians reported observations and expressed concerns to the administrative officials, but no internal reviews or investigations were initiated. In both cases there was inadequate reporting to the Coroner, who had a legal responsibility to investigate these deaths. In Case I the government did not call an inquiry into the deaths until the legal proceedings against RN Nelles ended and the Dubin Report (Dubin et al., 1983) was delivered. The police investigation had resulted in no arrest other than RN Nelles', and no one knew how the babies had died. In Case II the only legal proceeding was the Sinclair Inquest, which was called by the CME in consultation with the Minister of Justice and other government officials, within three weeks of the press release announcing the closure of the PCS program.

In Case I there were several proceedings: an inquest into at least one child's death, a criminal proceeding against the RN charged with murdering four of the infants, a report into the administrative functioning of the hospital, and, finally, a Royal Commission. The preliminary hearing ended one year after RN Nelles was arrested, the Dubin Report (Dubin et al., 1983) was released two years after RN Nelles' arrest, and the Grange Commission report (Grange, 1984) was released almost three years after RN Nelles' arrest.

In Case II there was only one judicial proceeding, and that was the Sinclair Inquest. Hearings for the inquest began in late 1995 and ended in 1998, and the report was released almost six years after the last child's death. No criminal charges were ever laid because incompetence in medical practice is not a criminal activity (Paul, 2000). It is beyond the scope of this study to discuss any civil proceedings that arose from these two cases.

Summary and Conclusions

As analysis of the data for both cases revealed that 9 to 10 months elapsed in each hospital between the time that one stakeholder group (RNs) first observed and reported the problem of unexpected infant deaths and decisive actions were taken. Individuals in positions of formal authority within the hospitals failed to structure, define, and act upon the problem within the hospitals. This resulted in public policy actions initiated at the level of provincial governments. These were an investigation into administration and management practices and a Royal Commission in Case I and a government-initiated inquest in Case II.

In both cases the nurses identified and correctly defined the unexpected deaths as a problem and reported their observations and concerns to nursing and medical administrative officials. In Case II the PCS program anesthetists also identified and defined the mortality and morbidity as a problem and reported their observations and concerns to the medical Section and Department Heads. The administrative officials receiving the reports did not undertake activities that would have helped to structure, define, and deal with the problem. In Case I the requests and concerns of the parent of one deceased child were ignored. In Case II family members were given an incorrect cause of their child's death, and their concerns about the expertise of the pediatric cardiac surgeon were dismissed. In Case I a police investigation initiated by the discovery of high digoxin levels in several deceased children resulted in the arrest of RN Nelles. After Nelles' arrest was reported, various administrative actions were taken within TSCH, and the number of deaths decreased to pre-July 1980 rates. In Case II the mortality and morbidity rates decreased when the PCS program was suspended, and all children needing cardiac surgery were sent out of the province.

In this chapter the research questions in the study have been presented sequentially. In the next chapter the findings are discussed in more detail from a thematic perspective.

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

In this chapter the final research question for this study is considered. This question was: What conclusions and policy implications can be drawn from the way that issues related to the unexpected infant deaths were defined and dealt with in the two hospitals in the period of time before the public inquiries were initiated? To answer this question, a thematic perspective has been adopted.

As presented in Chapter Two, policy analysis is a process in which a situation is perceived as a problem by an institution and becomes a policy issue. The policy process includes problem definition, determining possible alternatives, deciding on an implementation strategy, and evaluation of recommendations and outcomes of the chosen policy. This study examined the problem definition, or problem structuring, which is the first phase of the policy cycle. The way that a problem is defined determines which information is gathered, what alternatives are chosen, and eventually, what the outcomes are. There may be no consensus among stakeholders as to what the problem is (Dunn, 1981). Other influences that determine the way in which problems are defined include history, economics, interest groups, public press, and unpredictable events (J. Church, personal communication, February 6, 2002). It is important that the problem be defined correctly, because the best-intentioned interventions for an incorrectly identified problem will not solve the real problem (Dunn, 1981). In both cases in this study, various stakeholders defined the problem of unexpected infant deaths in a myriad of ways at different times during the 9-to-10 month period in which the problem of unexpected infant deaths developed.

Two analytical frameworks have facilitated the analysis and interpretation the findings in this study. The framework presented by Rochefort and Cobb (1993) suggests sub-processes of problem structuring and presents five dimensions of a problem that may contribute to its definition. These were the cause of the problem; the nature of the problem; the severity, incidence, novelty, and proximity of the problem; whether or not the problem is perceived as a crisis; the characteristics of the problem population; the ends-means orientation of those who are defining the problem; and the nature of the solution.

A second interpretive perspective was derived from Hofmann's definitions of sentinel administrative events and from errors of omission and commission, which he referred to as "executive mistakes" (Hofmann, 2002, p. 5). Both perspectives were discussed in Chapter Two and in Tables 3 and 6.

Positions of Formal Authority and Reporting Relationships

To apply Hofmann's conceptualization, it has been necessary to add further clarification to some of the definitions originally presented in Chapter One and in Appendix A to describe positions of formal authority. The information available from the data was not sufficient to enable certain details of the organizational structure and position responsibilities to be confirmed. Therefore, in the analysis phase, the generic term *positions of formal authority* was chosen to refer to all positions with titles implying administrative authority and responsibility. The formal authority of individuals in positions with administrative titles is derived from provincial hospitals legislation, which establishes hospital boards and specifies their powers and responsibilities. The positional authority of the CEO and the next level of executive administration is further delegated to

other positions. In some instances this authority is delegated to employees of the hospital board, and this is the case for all nurses whose positions have administrative titles. The formal authority of physicians who hold administrative titles may be derived through delegation of responsibility by the board to the Medical Staff and Medical Advisory Committee (MAC; Lemieux-Charles, 1994). MAC is usually comprised of medical department heads who may be elected by the medical staff or appointed either by the hospital board or, in the case of teaching hospitals, by the Dean of the Faculty of Medicine. Thus, physicians with administrative titles may not be employees of the board, although they have positions of responsibility delegated by the board.

From the data sources for this study it is sometimes possible to ascertain the reporting relationships of physicians, but it has rarely been possible to draw conclusions about their specific position responsibilities. The Dubin Report (Dubin et al., 1983) and the Sinclair Inquest Report (Sinclair, 2000) both drew attention to the legislated responsibility of MAC for the quality of patient care, and the authors expressed surprise and concern that MAC was not informed about the unexpected deaths in either case. More specifically, in Case II Justice Sinclair was dismayed by the fact that the acting Section Head, Pediatric Cardiology; Section Head, Pediatric Surgery; and Section Head, CVT Surgery denied having any responsibility for the peer or supervisory review of Dr. Odim's performance or for monitoring the outcomes of the PCS program.

In the discussion that follows, the term *executive administrator* has been used to refer to the CEO and VPs who are employees of the hospital board. In Case I executive administrators include the Executive Director and the Administrator. In Case II this includes the positions of VP Medicine, Nursing, and the Pediatric and Child Health

Program. The term *senior administrator* refers to board employees who report to executive administrators. For example, in Case II the DON who reported to a VP is considered to be a senior administrator. The term *medical administrator* is used to refer to all positions held by physicians, regardless of the level of the position, except for the position of VP Medicine. Even though physicians may not have been employees of the Board, the Dubin Committee and Justice Sinclair both viewed them as being in positions of formal authority and responsibility. For example, Justice Sinclair used the term *hospital official* to refer to Dr. Giddins (Acting Section Head, Pediatric Cardiology), who met with the family of a deceased child on behalf of the WHSC. It is clear from the data that there was confusion about the formal authority and reporting relationships and obligations of physicians who held positions with administrative titles in Case II, such as the Department Head, Surgery; Department Head, Pediatrics; Section Head, CVT Surgery; Section Head, Pediatric Surgery; and Section Head, Pediatric Cardiology.

Thematic Analysis

Findings of the study are now discussed in terms of six themes. These themes are: timing, focus, evidence, administrative responses to RNs and anesthetists, administrative responses to parents, and role of media.

Timing

Analysis focusing on the theme of timing illustrates how the problems were defined in different ways at different points during the 9-10 month period that began with the identification by RNs of unexpected deaths and ended when the government initiated reviews, presided over by a judge, were initiated. Table 24 summarizes the timing of the various ways the problems were defined in each case.

Table 24

Timing

Timing	Person and/or position	Case I	Person and/or position	Case II
Month One	RNs	Defined and reported problem as an unusually high number of unexpected deaths of unknown cause	RNs	Defined the problem as poor surgical outcomes due to the surgeon's lack of skill.
Month Two	RNs	Defined and reported problem as an unusually high number of unexpected deaths of unknown cause	RNs and anesthetists	Defined and reported the problem as poor surgical outcomes due to surgeon's incompetence to medical and senior administrators.
			Medical Administrator	Section Head responded to reports by assisting on one procedure and determined there were no problems.
				Department Head, Surgery hears about the problem
			Senior Administrator	DON discusses problem with Department Head, Pediatrics
Month Three			Senior Administrator	DON provided evidence that in month three she discussed problems in the PCS program with the VP Nursing.
			Anesthetists	Withdraw services from the PCS program
			Medical Administrators	Form the Wiseman Committee
Month Four			Executive Administrator	CEO informed before summer (by who was not reported) that there were problems in the PCS program, and they were being addressed.
Month Five				

(table continues)

Timing	Person and/or position	Case I	Person and/or position	Case II
Month Six	Medical Administrator	Defined problem as an unusually high number of children dying postoperatively when they were expected to live		
Month Seven	Medical Administrators and Nursing Administrators	Defined the problem as a high number of unexpected deaths, unknown etiology	Dr. Odim	Writes letter to Department Head, Surgery expressing concerns about the PCS program and requesting an external review.
			Medical Administrator	Dr. Postl appointed Department Head, Pediatrics and he requests information about the problems in the PCS program.
Month Eight			VP (formerly nursing now Surgery & Anesthesia)	Gave evidence this is the first time she heard about the problems within the PCS program, did not know about the anesthetists withdrawal of services.
Month Nine	Police, Coroners, Medical Administrators	Defined as digoxin overdoses, and then as deliberate digoxin overdoses	Medical Administrators	Department Head, Pediatrics, reviews cases, disturbed by high mortality, & aware that persons to whom concerns were addressed were not responding
		Defined the problem as murder, RN Nelles arrested		Department Head, Anesthesia recommends external review to Department Head, Surgery
				Department Head, Surgery understands nurses' concerns more than emotions.
			Senior Administrator	DON facilitates meeting between Department Head, Pediatrics and OR nurses.

(table continues)

Timing	Person and/or position	Case I	Person and/or position	Case II
Month Ten			Medical Administrator	Department Head, Pediatrics discussed about how to shut a program down with VP Pediatrics. Department Head, Pediatrics shuts down program
			Executive administrator	Informed of problems by Department Head, Surgery and that these were being monitored. Informed of program closure.
Month Eleven			Medical Administrators	Department Head, Surgery requested and received an external review
Month Twelve			Government Officials	Informed about the PCS program closure and meet to discuss alternatives
			"HSC"	Issued press release announcing suspension of program and a review
Month Thirteen			Chief Medical Examiner	The CME, after consultation with Minister of Justice and other officials, calls an Inquest.
Month twenty three	Judge Vanek	Decided there was not enough evidence to conclude RN Nelles administered the digoxin overdoses		
Month twenty four	Government of Ontario	Commission the Dubin Committee		
Month thirty one	Dubin Committee	Release Dubin Report		
Month thirty four	Government of Ontario	Appoint the Grange Commission (released in month 55).		

Case I: THSC

The problem was first defined by the nurses on Wards 4A and 4B as an unusually high number of deaths, the cause of which the nurses were not able to determine. Physicians were fully cognizant of the high number of deaths but did not define the deaths as a problem until month 6, when a CV surgeon defined the problem as a high number of deaths occurring postoperatively, when the children should be expected to survive. In month 7, at the formal review of the deaths, the problem was defined as a high number of unexpected deaths, of unknown etiology. In month 9 medical administrators defined the problem as deaths caused by digoxin toxicity. After the police were called in to assist in the investigation, they defined the problem as deliberate overdose of digoxin, requiring a criminal investigation. RN Nelles was arrested and charged with murder. Throughout all of the various government-initiated reviews, the media and most of the individuals quoted in the media defined the problem as deliberate overdose of digoxin causing multiple deaths.

Case II: WHSC

The nurses and anesthetists of the PCS program defined the problem as poor surgical outcomes directly attributable to the deficiencies in the surgeon's skill from the beginning of the events until the conclusion of the Sinclair Inquest. In month 2 a medical administrator, Dr. Wiseman, Section Head, Pediatric Surgery, assisted with a single operation and concluded that there were no problems. Other medical administrators and the DON were told about the reported problems and discussed them. The DON gave evidence that she reported the problems to the VP Nursing in month 3. The anesthetists' withdrawal of services in month 3 was never reported to executive administrators at the

time of the withdrawal. The CEO gave evidence that he was aware of problems in the program but did not know the details and was informed that they were being addressed. In the seventh month the newly appointed Department Head, Pediatrics, Dr. Postl, began to collect information about the problems and became aware that these problems were not being addressed. In month 9 medical administrators began to understand the severity of the problem, and in month 10 the program was shut down because key medical administrators, the Department Head, and Pediatrics and Section Heads of NICU, PICU, and Pediatric Cardiology, who had no line authority for the program, withdrew their support. Executive administrators and most medical administration did not define the mortality and morbidity rates as a problem until the 12th child had died, and even in month 10 they did not define the surgeon's lack of skill as a problem.

Focus

Analysis from the thematic perspective of focus reveals that the various stakeholders defined the problem differently, congruent with Dunn's (1981) point that stakeholders may not agree on what the problem is. This dichotomy created tension between frontline HCPs and medical administrative officials as the high mortality rates and, in Case II, the high morbidity rates continued. The conclusions of the government-initiated reviews confirmed that the nurses had been correct in assessing the mortality and morbidity rates as a problem needing intervention by senior, medical, and/or executive administrators. Summaries that illustrate different ways in which the problems were defined are presented in Table 25 for TSCH and Table 26 for WHSC. Elements of the conceptual framework developed by Rochefort and Cobb (1993) provide some insight into the nurses' definition. Key concepts include cause of the problem; nature of the

Table 25

A Summary of Focus for TSCH

Dimension of problem	Options	Registered nurses' problem definition	Medical administrators
Problem Causation	Personal-Impersonal	From month nine and continuing until after the publication of the Grange Commission report, defined the deaths as impersonal—no one was to blame.	In months 1-8, defined the problem as impersonal and reassured the nurses that the care they provided in no way contributed to the deaths. In month 9, defined as personal, someone was responsible for the children's deaths
	Intended-Accidental		In months 1-8, accidental, believed the children died from natural causes. In month 9 and thereafter, believed the deaths caused by deliberate overdoses of digoxin, the deaths were intended
	Blame allocated— Blame avoided		In the first 8 months, no blame was assigned to anyone or anything. In month nine, blame was assigned to RN Nelles
	Simple – Complex	From the beginning of the events, the nurses defined the problem as complex; they did not understand the reason for the suddenly high number of deaths	From the beginning of the events until month 9, they defined the problem as clinically expected outcomes not requiring investigation. In month nine, it was defined very simply: a nurse deliberately administered an OD of digoxin.
Nature of the Problem	Degrees of severity	From the beginning, the nurses defined the problem as severe	In months 1-5, the problem was not defined as severe. In month 6, a CV surgeon defined the problem as more severe, children were dying who were expected to live In month 9, the problem was defined as murder and therefore most severe.

(table continues)

Dimension of problem	Options	Registered nurses' problem definition	Medical administrators
	Incidence • Growing, stable or declining	In months 1-2, defined the incidence as growing	In months 1-2, defined the incidence as growing. In months 3-8, the incidence was varied, but never returned to pre July 1980 levels In month 9, incidence grew 100% over the previous highest number
	Novelty	The high number of deaths was unprecedented for the cardiology ward	The high number of deaths was unprecedented for the cardiology ward
	Crisis – non-crisis		In months 1-8, the problem was not viewed as a crisis In month 9, after the discovery of digoxin toxicity, the problem was considered a crisis.
	Emergency-non-emergency	In months 1-2, the nurses defined the problem as an emergency needing investigation and intervention	In months 1-8, medical administrators defined the problem as a non-emergency In month 9, the problem was defined as an emergency
Nature of the Solution	Available – nonexistent	The nurses did not know what the solution to the high death rate might be	In months 1-6, no solution was considered In month 7 suggested possible solutions that could become available In month 9, the solution became finding the perpetrator of foul-play
	Acceptable – objectionable		In month 7, the suggestions for possible solutions were all acceptable In month 9, found the arrest and charging of a RN with murder to be acceptable
	Affordable-unaffordable		In month 7, the solutions suggested required resources that may or may not have been available. In month 9, found the arrest of a RN to be affordable, even with bad publicity.

Note: The following parts of Rochefort and Cobb's (1993) framework were not applicable to problem definition by physicians and nurses in Case I: Social patterns, proximity, ends-means orientation, characteristics of the problem population.

Table 26

A Summary Focus for WHSC

Dimension of problem	Options	Registered nurses' and anesthetists' problem definition	Medical administrators
Problem Causation	Personal – impersonal	From the beginning of the events, until after the release of the Sinclair Inquest Report, defined the problem as personal—Dr. Odim's surgical abilities were not proficient as necessary	From month one until approximately month nine, defined the problem as personal: the PCS program anesthetists and nurses were the problem. Also defined the problem as poor interpersonal relationships, poor communication and emotional reaction(s) to unfortunate outcomes. In month 10, defined the problem as impersonal—the program was ineffective, not the surgeon.
	Intended – accidental	Defined the problem as accidental—the deaths were not intended.	Defined the deaths as accidental. Outcomes were acceptable, and if they were high it was because Dr. Odim was still learning and honing his skills.
	Blame allocated – blame avoided	Blamed Dr. Odim for the poor outcomes	Blamed the nurses and anesthetists for causing a problem where none existed
	Simple – complex	Defined the problem as simple—a surgeon whose skills were not adequate for the task	Defined the problem as simple—Dr. Odim was learning and the rest of the PCS team erroneous in their belief outcomes were not acceptable.
Nature of the Problem	Degrees of severity	Defined the problem as severe; children were dying who should not be dying, and that there were unnecessary complications	Defined the problem as not severe, mortality rate believed to be normal, believed mortality rate similar to previous surgeon's when he first started.
	Incidence • Growing, stable or declining	Defined the rate as stable, but too high	

(table continues)

Dimension of problem	Options	Registered nurses' and anesthetists' problem definition	Medical administrators
	Unprecedented – familiar	Defined the problem as unprecedented, believed outcomes worse than Dr. Odim's predecessor	Defined the problem as familiar—outcomes comparable to Dr. Odim's predecessor.
	Crisis – non-crisis	Defined the problem as a crisis as evidenced by the anesthetists' withdrawal of services.	Defined the problem as a non-crisis, as evidenced by the lack of investigation and intervention
	Emergency – non-emergency	Defined the problem as an emergency	Defined the problem as a non-emergency
Nature of the Solution	Available – nonexistent	Did not propose a solution	
	Acceptable – objectionable	Defined no program preferable to a poor program	Defined the solution, removing Dr. Odim, as objectionable because of the difficulty in recruiting a surgeon.
	Affordable – unaffordable		Defined the solution, removing Dr. Odim, as expensive: patients would be sent out-of-province and recruiting a new surgeon is costly.

Note: For the purposes of this analysis, the following did not apply in this instance: social patterns, proximity, characteristics of the problem population, ends-means orientation.

problem, its severity, incidence, novelty, proximity, crisis; characteristics of the problem populations; ends-means orientation of the problem definer; and the nature of the solution.

Case I: TSCH Registered Nurses

From the beginning of the events until the arrest of RN Nelles, the nurses defined the problem as an unusually high number of deaths of unknown cause. For example, from the beginning, the nurses realized the problem was complex because they did not know the reason for the suddenly high death rate. The nurses believed the problem to be severe because a higher than average death rate continued throughout the nine-month period. The problem was unprecedented; the nurses had never experienced such a high mortality rate on that cardiology unit. They defined the problem as a crisis needing prompt intervention by hospital administrators. Because they did not know the cause of the high mortality, they were unable to offer a possible solution. However, they did report their observations and concerns to the head nurses, physicians, and medical administrators.

Case II: WHSC Registered Nurses and Anesthetists

The nurses and anesthetists' focus of the problem definition remained the same from the beginning of Dr. Odim's tenure to the completion of the Sinclair Inquest. The PCS nurses and anesthetists focused on Dr. Odim's lack of surgical skill, believing it to be the cause of the high mortality and morbidity rates. The nurses and anesthetists defined the problem of high mortality and morbidity rates as severe, unprecedented, and a crisis. As in Case I, the nurses and anesthetists believed that the problem needed prompt intervention by hospital administrators. Unlike the nurses in Case I, the nurses in Case II

and the anesthetists were able to accurately identify the cause of the problem: an inexperienced surgeon performing surgery beyond his capabilities.

Case I: Medical Administrators

From the outset, until month 6, medical administrators defined the problem as deaths from natural causes and considered the high numbers a statistical anomaly. These physicians were unable to determine a cause for the sudden increase in mortality and recognized the problem as unprecedented, as did the nurses. However, unlike the nurses, medical administrative officials believed, until month 6, that the problem was not severe and was not a crisis. Even after the review of deaths in month 7, in which several of the deaths were labeled as unexpected, medical administrators continued to define the problem as deaths from natural causes. The medical administrators and the head nurses identified some solutions to the problem at the January mortality review, such as monitoring equipment, ventilator support, and the creation of an intermediate ICU. Plans for implementing these interventions were presented to the Program Advisory Committee sometime after RN Nelles' arrest.

In month 9, once the high digoxin findings became known, medical administrative officials were quick to believe that the deaths were caused by digoxin toxicity. After the police suggested foul play, medical administrative officials assisted police in their investigation of this hypothesis.

Murder by digoxin overdose remained the 'official' definition of the problem and was adopted by the Grange Commission. Although the RNAO and the Canadian Nurses Association did not agree with this definition, they were unable to define the problem with any certainty (Charbonneau, 1985; RNAO, 1987).

Case II: Medical Administrators

Medical administrators defined the problem in various ways over the course of the 10 months examined in this study. Much of their focus was on the HCPs within the program, but not on the pediatric cardiac surgeon. The cause of the problem was viewed as personal. Medical administrators defined the problem as being the complainants rather than the surgeon (Sinclair, 2000). When the anesthetists withdrew their services, this was seen as an indication that they could not get along with the new surgeon. Medical administrators viewed the problem as being the nurses' emotional reactions to the deaths, not the number or unexpected nature of the deaths.

Medical administrative officials viewed the problem as inevitable and accidental, believing that because the children undergoing cardiac surgery had heart conditions that were incompatible with life, their deaths were not remarkable. Thus, medical administrators did not define the deaths as severe or as a crisis, but rather viewed them as a normal part of the learning curve through which all new surgeons go and assumed that the mortality and morbidity rates would decline as Dr. Odim gained experience. Medical administrators also believed that the mortality rate was similar to that of the previous surgeon and did not focus on the rise in these rates as a problem; they believed that the PCS team was erroneous in their belief that the outcomes were not acceptable.

Medical administrators never focused or defined the problem as Dr. Odim's surgical abilities. Even in month 12, when Dr. Odim was told he would no longer be a part of the PCS program, it was because they believed that "it was not possible to rebuild [the PCS program] around [Dr.] Odim" (Sinclair, 2000, p. 454) and not because he did not have the necessary skills to perform surgery.

Administrative Responses to RNs and Anesthetists

Medical Administration

The data presented in Chapter Four reveal that medical administrative officials did not respond to the reported problems in any meaningful way. They failed to initiate any information-seeking activity or to conduct investigations that might have validated or disproved the reported observations and concerns. In both cases medical administrators denied or trivialized the problem. As shown in Table 27, the administrative errors defined by Hofmann (2002) were used as a framework for evaluating administrative responses. Almost all of the errors of omission and commission identified by Hofmann applied in both cases.

Case I: TSCH. The medical administrators failed to anticipate significant factors affecting decisions. For example, they failed to consider that the high mortality rate might continue and might in month 9 be double the previously high numbers in months 1, 2, and 7. Medical administrators failed to act when conditions changed. At the time, they believed that the babies were younger and sicker than previously admitted, but they did nothing to compensate for this. Medical administrators failed to consider how the loss of experienced RNs and their replacement by new graduates or inexperienced nurses would affect patient care. Medical administrators failed to consider a range of options when the nurses reported their problems and concerns.

The first response to the nurses' reports of observations and concerns was the two mortality reviews held in month 3. These reviews were not an investigation, but appeared to have been intended to placate the nurses and reassure them that no problem existed. A climate of male dominance was thus allowed to harm the relationship between physicians

Table 27

Hofmann's Mistakes

Hofmann's sentinel events	Toronto Sick Children's Hospital	Winnipeg Health Science Centre
Failure to anticipate significant factors affecting decisions		
Failure to act promptly on changed conditions	Administrators did not act promptly when the mortality rate increased suddenly	Administrators did not act at all when the PCS program started up with a new surgeon and only one (junior) cardiologist Did not act when reports of problems experienced in the OR and ICUs were reported Failed to respond
Failure to consider all options	Administrators did not investigate the correlation between the deaths and one particular nursing team. Administrators considered medication error, but did not investigate (i.e. in autopsy do drug screens) Administrators did not investigate the cause of death	In the push to restart the PCS program, administrators did not: • Plan for its restart • Assist the team to learn the needs and expectations of each other • Ensure a slow start with low-risk cases • Monitor outcomes
Failure to delegate and hold subordinates accountable	In Case I, senior and executive administrative officials were not informed about the high number of deaths.	The VP medicine did not know about the problems. The Department Heads did not hold the Section Heads accountable for the outcomes, or for the lack of planning
Failure to balance power interest		
Failure to keep patient and corporate needs paramount	Medical Administrators failed to ensure that the patients were receiving optimum care (i.e. they were dying when they were expected to live)	Medical administrators failed to ensure that the patients received the best care possible (i.e. the program was more important that the outcomes).

(table continues)

Hofmann's sentinel events	Toronto Sick Children's Hospital	Winnipeg Health Science Centre
Failure to follow the law, economic principles or prudent person rule	Medical administrators failed to report the problem to medical committees responsible for quality of care Failed to respond to the sudden jump in mortality rates	Medical administrators failed to report the problem to medical committees Failed to consider that, given the number of people reporting problems, and given that these were experienced staff, that the problem was genuine
Failure to fulfill contractual commitments and obligations to employees		
Failure to protect the assets of the corporation	The lack of response ended with the arrest of RN Nelles and damage to the reputation of TSCH.	The lack of response resulted in the reputation of the WHSC being damaged The lack of response resulted in civil proceedings against the hospital
Failure to lead where there are opportunities to improve the health of patients or the community	No leadership demonstrated	No leadership demonstrated
Permitting decisions to be made without adequate analysis	Made the decision to do nothing, without a thorough investigation into the first 10 deaths.	Made no decisions, did not analyze the information available regarding the mortality and morbidity rates, and problems experienced intraoperatively and in the ICUs.
Choosing political, not business solutions	N/A	Wanted a PCS program, did not support the program and did not consider if the population of Manitoba warranted its stand-alone program
Making economic decisions that harm clinical care and outcomes	N/A	The reorganization may have contributed to the lack of attention to the PCS program. It was argued that the cutbacks negatively affected patient care
Allocating limited resources without applying objective criteria	N/A	There was no objective criteria against which the performance and outcomes of the PCS program could be measured

(table continues)

Hofmann's sentinel events	Toronto Sick Children's Hospital	Winnipeg Health Science Centre
Withholding negative information from individuals with the right to know	No one outside of TSCH knew about the high death rate	Justice Sinclair (2000) found that the parents were not given enough information in order for them to give informed consent. No one outside of WHSC knew about the problems in the PCS program
Making selective use of facts with different audiences	N/A	The PCS program was promoted as being of high quality to the parents of the children.
Showing favoritism among the board, management, medical staff, and employees	N/A	N/A
Signing contracts that are not achievable	N/A	N/A
Condoning discrimination among patient types on the basis of source of payment, ethnicity, gender or other inappropriate or illegal factors	N/A	N/A (The first three children to die were of visible minorities, but this was coincidence, not a willful choosing)
Allowing a climate of male dominance to harm relationships between doctors and nurses, thus accelerating nurse turnover and poor patient care	The male physicians controlled nursing practice.	Dr. Odim made sexist remarks in the OR; there is no record that he was ever reprimanded for them. In the Wiseman Committee, one male physician verbally abused a female anesthetists. The (female) nurses' reports of problems were dismissed by the (male) medical administrators as 'emotional responses' to unfortunate outcomes Nurses being told that they could not judge a surgeon's skills
Making high technology investments without addressing access problems	N/A	N/A

and nurses, resulting in poor outcomes for the children. Medical administrators did not seek a cause for the sudden, inexplicable increase in mortality. In month 6 Dr. Trusler, the Director of the Division of CV Surgery, wrote a letter to Dr. Rowe, the Director of the Division of Cardiology, "expressing his concern about the deaths of patients who had successfully survived surgery and who had thereafter died after leaving the ICU," as Dr. Trusler put it, "at a time when we would assume they are out of danger" (Grange, 1984, p. 13). In response to this letter, another formal review of charts was conducted. As mentioned previously, interventions that may have decreased the number of deaths were not recommended to the Program Review Committee until sometime after the arrest of RN Nelles, which took place two months after the formal review. Medical administrators made errors of omission because they did not seek further information or analyze the situation through a formal investigation that might have uncovered the reason for the continued high number of deaths. Medical administrators failed to report the problem to committees within the hospital charged with ensuring quality patient care. In other words, they failed to keep patient and corporate needs paramount in their decisions and actions.

When the high levels of digoxin were discovered, these were properly reported to the coroner. The coroner defined the deaths as deliberately administered digoxin and called in homicide detectives, and the medical administrators turned the investigation over to the police, resulting in damage to the reputation of the hospital, the RN who was arrested, and, much later, all of the nurses on the cardiology wards. Medical administrators never took responsibility for the problem and never accounted for their action(s).

Case II: WHSC. As in Case I, medical administrators failed to act when conditions changed. The conditions under which Dr. Odim began his tenure were quite different from the conditions the previous surgeon had experienced, but medical administrators failed to acknowledge the effect of the changed circumstances on the PCS program. When Dr. Odim began his tenure, medical administrators failed to plan for the restart of the PCS program and to assist the PCS team in learning each other's needs and expectations, and did not plan for a slow startup and monitor outcomes.

The Department Heads did not hold the Section Heads accountable for the PCS program outcomes or for the lack of planning when the program restarted with Dr. Odim as surgeon. Until the program was suspended in month 10, medical administrators did not respond to the reported problems in any definitive fashion. In response to repeated requests from nurses, one medical administrator scrubbed on a single operation and announced that there had been no problems. Medical administrators made the decision not to investigate further, without adequate information or an objective analysis of the reports they received.

In response to the unprecedented withdrawal of services by anesthetists, medical administrators formed the Wiseman Committee, which was established without terms of reference and was not required to report to anyone. The presence of the surgeon as a member of the committee had the effect of silencing all criticism, and committee membership did not include every professional and technical service area involved. When Dr. Odim wrote a letter to the Department Head, Surgery, in which he expressed his concerns about the PCS program, this letter was eventually shared with other Department

Heads, but medical administrators did not formally respond to either the letter or the concerns expressed.

Justice Sinclair (2000) wrote that the Department Heads of Surgery and Pediatrics "had an obligation to ensure that the very serious issues of competence and patient safety . . . were investigated fully" (pp. 269-270). Such information seeking and analysis of the situation never took place. When medical administrators failed to keep patient and corporate needs paramount, their lack of response resulted in damage to the reputation of WHSC and eventually in civil proceedings against the hospital and individuals.

Medical administrators; the Department Head, Pediatrics; and the Section Heads, Pediatric Cardiology, NICU, and PICU, who had no direct line authority over the PCS program, suspended it after several individuals withdrew their support and/or services. The medical administrators who did have direct line authority over the PCS program did not take responsibility for the problems within the PCS program.

In both hospitals the accurate observations and timely reporting of concerns by female nurses were dismissed by medical administrators. Administrative behavior allowed a climate of male dominance to persist, thus contributing to the continuance of poor patient outcomes. In Case II Dr. Odim "made a number of comments that were sexist and of a sexual nature to some of the nurses" (Sinclair, 2000, p. 149). There is no evidence that medical administrators ever addressed these remarks, but there is evidence that verbal abuse was tolerated in other circumstances; for example, in Wiseman Committee meetings. The nurses' expression of emotions was used as a reason for negating their observations and concerns.

Senior (Nursing) Administrators

Case I: THSC. There is no evidence in the Dubin Report (Dubin et al., 1983), the Grange Commission report (Grange, 1984), or in any other data source used in this study about how the nursing administrators responded to the nurses' reported observations and concerns. The head nurses attended the mortality reviews in month 3. The DON and the head nurses were also present at the mortality review in month 7. At the month 7 mortality review, the Head Nurse refused to split up the one nursing team correlated with most of the unexpected deaths.

Case II: WHSC. When the OR nurses reported their observations and concerns to their Head Nurse, she initiated a meeting between the DON and the OR nurses. The Head Nurse also relayed the nurses' observations and concerns to the Section Head, Pediatric Surgery, and requested his assistance. When the OR nurses became concerned about the problems experienced in the OR theatre, several asked to be relieved from duty in the PSC program. The OR Head Nurse denied these requests, using the rationale that there were no experienced nurses to take their place. There is no evidence that the DON knew about these requests. The DON did receive a request from one of the nurses who worked in the Heart Centre, and she agreed to find alternative work for this nurse. Shortly after this request was made, the PCS program slowed down because of the anesthetists' withdrawal of services and the formation of the Wiseman Committee. Because of these developments, the nurse who made this request remained at the Heart Centre until the fall.

The DON responded to the nurses' reports of problems by discussing these with medical administrators throughout the period in this study. In month 9 the DON

facilitated a meeting between two of the OR nurses and the Department Head, Pediatrics. In month 10, after the 12th death, the DON took the opportunity to indirectly suspend the PCS program by informing the Department Head, Pediatrics, that she could not "ask those nurses to go back in there. . . . ICU is full; . . . we have two . . . cardiac kids in the unit. . . . I can't find extra staff, . . . and most of all I couldn't get the nurses to go in" (Sinclair, 2000, p. 445).

Evidence

As previously noted, policy problems occur when there is a discrepancy between what is and what the stakeholders believe should be. The nurses in Case I and the nurses and anesthetists in Case II believed that the number of deaths should be much lower than it was. In Case I the medical administrators viewed the high mortality rate as a statistical anomaly rather than as a discrepancy between what was and what should have been. In Case II the medical administrators saw no discrepancy at all; they believed that the mortality rate was acceptable. In both cases the evidence that supported the stakeholders' views is summarized in Tables 28 and 29.

Case I: TSCH

In the first case, the nurses and physicians were aware that the number of deaths had suddenly increased from the norm. This awareness was later supported by statistical evidence (Grange, 1984). Although there was no evidence to support or refute the initial belief that the deaths were from natural causes, no one in a position of formal authority sought information or investigated possible causes of death. The validity of digoxin testing was called into question during the Grange Commission, and the methods used at

Table 28

Evidence to Support Problem Definition in Case I

Registered nurses' problem definition	Evidence	Medical administrators	Evidence
From month nine and continuing until after the publication of the Grange Commission report, defined the deaths as impersonal—no one was to blame.	Nurses had no evidence to support their claim	In months 1-8, defined the problem as impersonal and reassured the nurses that the care they provided in no way contributed to the deaths. In month 9, defined as personal, someone was responsible for the children's deaths	Medical administrators had no evidence to support or refute their belief that the nurses did not contribute to the children's deaths Evidence of murder was circumstantial
		In months 1-8, accidental, believed the children died from natural causes. In month 9 and thereafter, believed the deaths caused by deliberate overdoses of digoxin, the deaths were intended	No evidence to support or refute belief children died from natural causes Digoxin testing called into question at Grange Commission, and by other experts No evidence to support belief deaths were intended
		In the first 8 months, no blame was assigned to anyone or anything. In month nine, blame was assigned to RN Nelles	No evidence to support belief RN Nelles was to blame
From the beginning of the events, the nurses defined the problem as complex; they did not understand the reason for the suddenly high number of deaths	Nurses' were aware of the normal number of deaths. Nurses were unable to determine a reason for the high number of deaths	From the beginning of the events until month 9, they defined the problem as clinically expected outcomes not requiring investigation. In month nine, it was defined very simply: a nurse deliberately administered an OD of digoxin.	No evidence to support or refute belief deaths were normal outcome of condition. Questionable evidence to support belief of digoxin toxicity

(table continues)

Registered nurses' problem definition	Evidence	Medical administrators	Evidence
From the beginning, the nurses defined the problem as severe	Evidence is that the numbers did not decrease to pre-July 1980 levels until after the arrest of RN Nelles	In months 1-5, the problem was not defined as severe. In month 6, a CV surgeon defined the problem as more severe, children were dying who were expected to live In month 9, the problem was defined as murder and therefore most severe.	No evidence to support belief problem was not severe: mortality rates double or more than pre-July 1980 rates Formal review concluded 14 deaths "unexpected" Circumstantial evidence to support murder charge
In months 1-2, defined the incidence as growing	Statistical evidence supported this belief	In months 1-2, defined the incidence as growing. In months 3-8, the incidence was varied, but never returned to pre July 1980 levels In month 9, incidence grew 100% over the previous highest number	
The high number of deaths was unprecedented for the cardiology ward	Statistical evidence given at the Grange Commission supports this belief	The high number of deaths was unprecedented for the cardiology ward	Statistical evidence presented at Grange Commission supporting this
		In months 1-8, the problem was not viewed as a crisis In month 9, after the discovery of digoxin toxicity, the problem was considered a crisis.	Evidence supporting digoxin toxicity considered questionable by experts at Grange Commission and elsewhere
In months 1-2, the nurses defined the problem as an emergency needing investigation and intervention	The numbers were unprecedented, the nurses were correct in assessing the situation to be an emergency.	In months 1-8, medical administrators defined the problem as a non-emergency In month 9, the problem was defined as an emergency	

(table continues)

Registered nurses' problem definition	Evidence	Medical administrators	Evidence
The nurses did not know what the solution to the high death rate might be		In months 1-6, no solution was considered In month 7 suggested possible solutions that could become available In month 9, the solution became finding the perpetrator of foul-play	No concrete evidence that foul play ever occurred.
		In month 7, the suggestions for possible solutions were all acceptable In month 9, found the arrest and charging of a RN with murder to be acceptable	
		In month 7, the solutions suggested required resources that may or may not have been available. In month 9, found the arrest of a RN to be affordable, even with bad publicity.	

Note: The following parts of Rochefort and Cobb's (1993) framework were not applicable to problem definition by physicians and nurses in Case I: social patterns, proximity, ends-means orientation, characteristics of the problem population.

Table 29

Evidence to Support Problem Definition in Case II

Registered nurses' and anesthetists' problem definition	Evidence	Medical administrators	Evidence
From the beginning of the events, until after the release of the Sinclair Inquest Report, defined the problem as personal—Dr. Odim's surgical abilities were not proficient as necessary	Previous experience with other surgeon(s) Observations during surgical procedures: • Problems with cannulation • Pacing wires falling out • Excessive bleeding Observed poor outcomes, including longer ICU stays and death	From month one until approximately month nine, defined the problem as personal: the PCS program anesthetists and nurses were the problem. Also defined the problem as poor interpersonal relationships, poor communication and emotional reaction(s) to unfortunate outcomes. In month 10, defined the problem as impersonal—the program was ineffective, not the surgeon.	No evidence to disprove nurses' and anesthetists' observations and concerns. There was evidence of poor communication and interpersonal relationships. The nurses were emotional when describing the problems observed in the OR and ICUs.
Defined the problem as accidental—the deaths were not intended.		Defined the deaths as accidental. Outcomes were acceptable, and if they were high it was because Dr. Odim was still learning and honing his skills.	No evidence to support claim that outcomes were acceptable. No evidence to support claim that deaths were acceptable during the learning curve. No evidence that learning curve was evaluated
Blamed Dr. Odim for the poor outcomes	Evidence as noted above.	Blamed the nurses and anesthetists for causing a problem where none existed	No evidence to support this claim
Defined the problem as simple—a surgeon whose skills were not adequate for the task	Evidence as noted above	Defined the problem as simple—Dr. Odim was learning and the rest of the PCS team erroneous in their belief outcomes were not acceptable.	No evidence to support belief that outcomes were normal

(table continues)

Registered nurses' and anesthetists' problem definition	Evidence	Medical administrators	Evidence
Defined the problem as severe; children were dying who should not be dying, and that there were unnecessary complications	No evidence, except prior experience.	Defined the problem as not severe, mortality rate believed to be normal Believed mortality rate similar to previous surgeon's when he first started.	No statistical analysis of previous surgeon's outcomes done until the Sinclair Inquest
Defined the rate as stable, but too high	No evidence, except for prior experience.		
Defined the problem as unprecedented, believed outcomes worse than Dr. Odim's predecessor	No evidence, except for prior experience.	Defined the problem as familiar—outcomes comparable to Dr. Odim's predecessor.	As above
Defined the problem as a crisis as evidenced by the anesthetists' withdrawal of services.	No evidence, except for prior experience.	Defined the problem as a non-crisis, as evidenced by the lack of investigation and intervention	
Defined the problem as an emergency	No evidence, except for prior experience.	Defined the problem as a non-emergency	
Did not propose a solution			
Defined no program preferable to a poor program		Defined the solution, removing Dr. Odim, as objectionable because of the difficulty in recruiting a surgeon.	There had been problems in recruiting a replacement for the previous surgeon.
		Defined the solution, removing Dr. Odim, as expensive: patients would be sent out-of-province and recruiting a new surgeon is costly.	Sending patients out-of-province is expensive, as is recruiting a new surgeon.

Note: For the purposes of this analysis, the following did not apply in this instance: social patterns, proximity, characteristics of the problem population, ends-means orientation.

the TSCH were dropped for more accurate methods in the mid-1980s (Hamilton, 1993). Justice Grange wrote:

> It was suggested that I be cautious in relying on toxicologic evidence. . . . My cautions should go so far as to preclude my attaching any weight at all to any data other than those about which there was no expert dispute. I do not think that to be an appropriate attitude. (p. 29)

The murder charge against RN Nelles depended upon the findings of digoxin toxicity and the fact that she had been on duty when three of the four babies died. Investigating officers viewed her request for legal counsel and her refusal to answer all of the questions that they asked as suspicious. The media reported that one physician described RN Nelles as having no emotional reaction to Justin Cook's death and her comment to colleagues that five deaths in seven nights was not a bad record as being possible evidence of her guilt (Brehl & Corner, 1982). The media also reported RN Nelles' emotional state during the preliminary hearing (Carey, 1982). No one ever saw anyone give the digoxin, and no motive was ever uncovered. Rochefort and Cobb (1993) pointed out that it is much easier to blame an individual than to acknowledge system problems. This appears to have been the case at THSC.

Case II: WHSC

The nurses presented consistent evidence from their first-hand observations and experiences to support their allegation that the surgeon had deficient surgical skills. The anesthetists also presented consistent evidence from their first-hand observations and experiences to support their allegation that the surgical outcomes were poor. The nurses and anesthetists had no statistical evidence that the mortality and morbidity rates were higher than accepted standards. When Drs. Williams and Roy conducted the external review in month 11, they were unable to find data that supported the nurses' and

anesthetists' claims that morbidity and length of stay had increased (Sinclair, 2000). However, evidence to support the belief that the mortality and morbidity rates were higher than acceptable standards was later presented at the Sinclair Inquest.

Medical administrators had no evidence to disprove the nurses' and anesthetists' observations and concerns. However, it was true that the nurses were responding emotionally to the deaths. As time passed and the nurses described the problems, they often cried. In this context the administrators, and particularly the medical administrators, dismissed the nurses' observations and, instead, defined the problem as one of communication and personality conflicts. As mentioned earlier, there was also a pervasive climate of professional disrespect in which "[Dr.] Odim made a number of comments that were sexist and of a sexual nature. . . . Those comments were unprofessional and offensive and . . . demeaning to the nursing profession" (Sinclair, 2000, p. 140). The Department Heads gave evidence that they found a lack of communication between the anesthetists and Dr. Odim.

In their responses to the nurses and anesthetists, medical administrators did not provide evidence that the mortality and morbidity rates were acceptable or that these rates were the same as for the previous surgeon. They explicitly refused to consider that the nurses' and anesthetists' evidence warranted an investigation. No standards had been set against which outcomes could be measured.

Administrative Responses to the Parents

Failure to consider the needs of patients and families is one of the examples of a sentinel described by Hofmann (2002). One parent in Case I and one family in Case II approached medical administrators with specific concerns. In both instances the

responses to the parents' concerns were disrespectful, and no investigative action was taken.

Case I: TSCH

Heather Dawson, mother of Amber Dawson, was familiar with digoxin toxicity, and she was concerned that Amber had died from a medication error. Ms. Dawson specifically requested that her daughter's autopsy be done outside of TSCH and include drug testing. However, the coroner had the autopsy performed at TSCH, as was the usual practice, and did not request drug screening. Months after Amber's death, during the police investigation into the unexpected deaths, tests were conducted on Amber's tissues to detect digoxin, but these proved inconclusive.

Amber's death occurred at the end of month 1. If the coroner had honored Ms. Dawson's request and digoxin toxicity had been discovered, this might have instigated protocols to prevent other deaths, if indeed the deaths were caused from digoxin overdoses. If the drug screen had ruled out digoxin toxicity, this might have provided evidence that digoxin toxicity was not the cause of the unexpected deaths.

Case II: WHSC

Only one set of parents expressed concern about their child's death before the suspension of the PCS program. The Capili family requested a meeting with hospital officials after their child's death but were told to wait until the autopsy report was available. Two months after their child's death, Dr. Giddins, Acting Section Head, Pediatric Cardiology, met with them, even though the autopsy report was not yet available. During the interview the family questioned Dr. Odim's surgical capabilities. In response, Dr. Giddins told the family that Dr. Odim had trained in Boston and Montreal,

implying that Dr. Odim was a skilled surgeon. Dr. Giddins gave the family an incorrect cause of death, one that did not suggest that the surgeon was at fault. HCPs present at Marietess's surgery had questioned Dr. Odim about the possibility that Marietess was suffering from superior vena cava syndrome, but Dr. Odim refused to consider this possibility. The autopsy and findings of the Sinclair Inquest in 2000 ruled that Marietess had died from superior vena cava syndrome, caused by sutures placed by Dr. Odim during the operation. The legitimate concerns of the Capili family about the circumstances surrounding their child's death were not addressed in a timely and truthful manner.

In both cases medical administrators withheld information from the people who had a right to know (Hofmann, 2002). In Case I the parents of children being admitted to Wards 4A and 4B knew nothing about the unusually high mortality rate. In Case II the parents were not told about the anesthetists' withdrawal of services, the inexperience of the surgeon, or other problems within the PCS program. Justice Sinclair (2000) found that the parents did not have enough information to give informed consent.

In both cases executive administration failed to consider the needs and sensibilities of the deceased children's parents when the media made the announcement of RN Nelles's arrest in Case I, and when hospital officials called a press conference to announce that the program had been suspended in Case II. In both cases it was very possible that their children had not died as a result of a medical condition, but as a result of human error.

Role of the Media

The media did not become involved in these cases until medical administrators had taken definitive actions. Once they had reported the problems, the media continued to report as the events unfolded, until the final judicial reports were released to the public. Particularly in Toronto, the media played a role in problem definition. A summary of the role of the media is found in Table 30.

Case I: TSCH

From month 9, when the arrest of RN Nelles was reported in the media, until the release of the Grange Commission Report (Grange, 1984), the media defined the deaths as murder committed by a nurse. Initially, the focus of media attention was on RN Nelles as the murderer. During the Grange Commission the media focus shifted to RN Trayner, a possible suspect. After the release of the Grange Commission report, the media defined the problem as a murder mystery. The media did not consider a possible culprit among another professional group or among hospital support staff or visitors, or any other reason for the deaths than digoxin overdose. Nor did the media ever question why so many children had died before those in positions of formal authority took action.

RNAO (1987) commented that reporters

> did not focus on the physicians' testimony because the physicians were treated as 'expert' witnesses and, therefore, were asked to give only scientific or medical evidence. . . . By contrast, the nurses were treated as suspects. . . . If the Inquiry had not been conducted like a 'witchhunt' the media would probably have treated the nurses with greater respect and impartiality. (p. 14)

Table 30

Role of the Media

Case I: Toronto Sick Children's Hospital	Case II: Winnipeg Health Science Centre
From month nine onward until the Grange Commission report was presented, newspaper reporting focused on a nurse deliberately administering a fatal overdose of digoxin. • The focus was first on RN Nelles • During the Grange Commission, the focus shifted to RN Trayner • In spite of no objective evidence, most news reports focused on the deaths as being caused by deliberate digoxin overdoses.	In month 12, when program was closed for two months, hospital issued press release saying that the program was suspended because of less than satisfactory outcomes
Newspaper reporting failed to present objective information even after Grange Commission concluded in month 54. Print media did not provide coverage of evidence presented at the Grange Commission that would have provided a different focus on the problem	In month 12, parents of the deceased children and chief medical examiner had not previously been informed of any deviations from normal and responded to media reports with demands to hospital administration and government.
	From month 12 until the release of the Sinclair Inquest Report in month 81, the media reported on evidence presented at the Inquest.
	From month 12 until month 82, the media reported on Dr. Odim, for example: • That he was being set up as a sacrifice (Paul, 1995). • Announcing Dr. Odim's turn to give evidence "Surgeon poised to sit on hot seat" (Paul, 1997) • That the Georgia State Medical Board did not renew Dr. Odim's license (Mitchell, 1996). • That the California licensing board was investigating Dr. Odim (Tjaden, 2000, #4450, p. A4).

Case II: WHSC

The media gave the press release from the hospital that announced the suspension of the PCS program because "patient outcomes have not achieved standards which the hospital hoped for when the program was re-introduced in February 1994" (Sinclair, 2000, p. 456). Following the initial reporting, the media reported the response of the parents and others who demanded an inquiry into the deaths. Once the Sinclair Inquest was called, the media reported on the evidence presented at the Inquest, the activities of Dr. Odim, and a summary of the findings and recommendations of the Inquest. Although the media tended to focus on Dr. Odim's actions, they did not sensationalize the story as had happened in Case I.

Summary of Thematic Analysis

At TSCH the nurses defined the problem as a high number of deaths of unknown etiology. Administrative officials defined the problem as a statistical anomaly; they believed the children were dying from natural causes. When one surgeon defined the problem specifically as unexpected deaths, administrative officials did not investigate the cause(s) of death or take any action in response to the deaths or to the surgeon's letter. When the high levels of digoxin were discovered, hospital officials were quick to define the problem as deaths occurring from digoxin overdose. The coroner and police defined the problem as deaths occurring from deliberate digoxin overdose, and the search for the killer began. The media and Grange Commission perpetuated this definition of the problem, even in the face of evidence to the contrary.

At WHSC the nurses and anesthetists defined the problem as high mortality and morbidity rates due to the surgeon's lack of surgical skill and maintained this view until

the end of the Sinclair Inquest. Hospital administrators defined the problem as emotional reaction(s) to deaths of infants, as poor interpersonal relationships, as a problem with communication, and, finally, as an ineffective program evidenced by poor outcomes. Administrative officials never defined the problem as involving an incompetent surgeon. Justice Sinclair (2000) quoted an expert witness who concluded, "The skill and dexterity of the surgeon performing these operations were insufficient for the challenge" (p. 268).

Discussion

The concept of administrative accountability is now used to discuss the adequacy and appropriateness of leadership behavior in the two cases. Four dimensions of administrative accountability are considered: administrative responsiveness, accountability for decisions about organizational structure, accountability for setting and monitoring professional standards, accountability for organizational norms.

Administrative Accountability and Responsiveness

Accountability can be defined as "an obligation to answer to an authority that conferred a responsibility, by an agent who accepted it, with the resources and delegated authority necessary to achieve it, and with the understanding that inadequate performance will result in intervention" (Shortt & Macdonald, 2002, p. 27). For there to be accountability, objectives must be defined, standards set against which performance can be measured, and outcomes documented and compared to the set standards. From the comparison lessons can be learned and objectives may be revised (Shortt & Macdonald, 2002). Campbell (2002) tied mistakes to accountability, pointing out that "unwillingness to acknowledge mistakes reflects an abdication of responsibility, . . . meaning to be answerable and accountable for one's actions" (p. 42). According to Gardner and Russell

(1989; as cited in Smith, Armann-Hutton, Inions, & Hutton, 1999), responsiveness is one dimension of accountability. They suggested that a responsible person is

> able to think and act reasonably. We may not know at the time what is "reasonable" so the accountability relationship has to include the concept of responsiveness. Responsiveness is the quality evident in activities to both receive and search out relevant information. It implies an awareness of, and sensitivity to, factors in the environment that affect the ability to accomplish the task. (p. 374)

In both cases hospital administrative officials were unresponsive to the nurses' reports of high mortality and high morbidity. If, as Gardner and Russell (1989; as cited in Smith et al., 1999) pointed out, accountability includes the concept of responsiveness, then hospital administrative officials abdicated their responsibility when they failed to seek out information about the events that happened in these two cases. In both cases the administrators received accurate information, which required further investigation and intervention in order to prevent mortality and to promote quality patient care.

In Case I the hospital administrators and the coroner failed to respond to Ms. Dawson's requests. If these individuals had been respectful and responsive to her concerns, pertinent information may have come to light about the cause of Amber's death and the cause of other deaths on Ward 4A and 4B. Specifically, if testing for digoxin and other medications had been done at Amber's autopsy, this might have led to preventive measures being taken at the end of July 1980 instead of at the end of March 1981.

In Case II the medical administrators were not responsive to the nurses' and anesthetists' reported observations and concerns. The lack of administrative response eventually precipitated the anesthetists' withdrawal of services. Justice Sinclair (2000) made it clear that at this point medical administrators should have thoroughly

investigated the anesthetists' concerns and intervened in the PCS program, but this did not happen.

Accountability for Decisions About Organizational Structure

Executive-level leaders are responsible and accountable for decisions about how the organization is structured. In the 1990s many hospitals, including WHSC, were "restructured," "downsized," "rightsized," "decentralized," "flattened," and "redesigned" (Hibberd & Smith, 1999, p. vii). Such experiments with organizational structure could be considered as adopting a *management fashion*, as described by Abrahamson (1996) and VanDer Wiele, Williams, and Dale (2000). Abrahamson defined management fashion setting as

> the process by which management fashion setters continuously redefine both their and fashion followers' collective beliefs about which management techniques lead to rational management progress. . . . [It is] a relatively transitory collective belief, disseminated by management fashion setters, that a management technique leads rational management progress. (p. 257)

The new administrative fashion helps administrators find simple answers to complex organizational problems (VanDer Wiele et al., 2000). "Management fashion setters produce the collective beliefs that certain management techniques are both innovations and improvements relative to the state of the art" (Abrahamson, 1996, p. 265). Rhetoric plays an important part in the adoption of management fashion. For example, there is a correlation between media reports about hospital matrix organizations and the adoption of matrix organization in hospitals (Abrahamson, 1996). Justice Sinclair (2000) drew attention to the change from a portfolio structure to a program (matrix) structure and was highly critical of the lack of accountability in the program management structure at WHSC.

After the release of the Sinclair Inquest Report in 2000, the Manitoba provincial government formed a review committee to follow up on Justice Sinclair's recommendations (Thomas, Bagnall, & Bryant, 2001). The Thomas Committee found only anecdotal evidence regarding the effectiveness of program (matrix) management and found evidence that in many hospitals "physicians and executives . . . want to circumvent the team process" (Thomas et al., 2001, p. 39). The Thomas Committee also found that in 2001, seven years after structural reorganization at WHSC, "the physician perspective remained dominant in the team setting" (p. 39) and provided nine guidelines for effective team management.

Justice Sinclair (2000) also drew attention to the fact that the nursing profession was not represented at the executive management and board level in the new program management structure, although one of the Vice Presidents in the new structure had a nursing background. This lack of access for the nursing profession to the senior level of management was also a failure in Case I at TSCH.

In the two cases examined in this study, the responsibility for patient well-being was conferred by the public to the hospital boards. In turn, the hospital boards delegated this responsibility to executive administrators, who in turn delegated it to department heads and various medical committees. In neither case were the executive administration, medical committees, or hospital board informed of the high mortality and morbidity rates. There is no evidence that senior medical administrative officials took responsibility for the problems. In Case I no medical administrative official ever took responsibility for allowing the high number of deaths to continue without an investigation or intervention. After the Grange Commission report was released, NDP leader Bob Rae asked the

provincial legislature how so many babies could die without an administrator's noticing and asking why (Ferri, 1985). This question was never answered.

In Case II the lines of authority and responsibility were never clearly delineated, so none of those in administrative positions took responsibility for the PSC program (Sinclair, 2000). No one reported the problems to Dr. Odim's immediate supervisor. In addition, Dr. Odim's supervisor was not included in the Wiseman Committee or in the decision to suspend the PCS program.

In both cases there were committees charged with ensuring quality patient care. Both the Dubin Report (Dubin et al., 1983) and the Sinclair Inquest Report (Sinclair, 2000) were critical of medical practitioners and administrators for not reporting the unexpected deaths to these committees, particularly to MAC. Such committees assist in holding administrators accountable and might have encouraged information seeking and better, more timely problem definition.

Executive-level administrators are empowered and expected to make decisions about how the organization is structured. In doing so, they should consider not only current rhetoric and fashion, but also evidence and expert opinion. Exclusive reliance on one group of experts—that is, current fashion setters—who advocate program management models can be seen in retrospect as having been highly problematic in the WHSC context because clear lines of accountability and responsibility had not been delineated (Sinclair, 2000). By the time these decisions about organizational structure were made at WHSC, evidence about the relationships of magnet hospital characteristics and patient outcomes was beginning to become available. The data from this study did not reveal whether the VP Nursing or DON might ever have brought this evidence to the

attention of executive-level administration. As Hofmann (2002) noted, failing to seek evidence relevant to administrative decisions causes mistakes.

Accountability for Setting and Monitoring Performance Standards

In order to evaluate processes and outcomes, whether of an individual HCP or a program, performance must be measured against a standard (Haines, 1993; Shortt & Macdonald, 2002). In both cases there was no standard against which outcomes could be measured; therefore, it became convenient to believe that the death rate was acceptable. Because there were no standards against which to measure outcomes, there was no way to validate that the mortality rate was higher than acceptable norms (Saul, 2001). A reasonably prudent individual might have investigated to determine what the standard outcomes were, but those in positions of authority and responsibility did not do so.

If hospital administrators at all levels are to be accountable to the hospital board, the government, and, ultimately, the public, it is necessary that standards and expected outcomes be established, which provide criteria against which actual outcomes can be measured. In both of these cases there was no tracking of outcomes and no standards against which to monitor those outcomes. Two of the judicial reports made recommendations about standards and monitoring. The Dubin Report (Dubin et al., 1983) made seven recommendations about monitoring mortality and morbidity and how this should be done. Justice Sinclair (2000) recommended that hospitals establish quality assurance and risk management committees in order to deliver quality patient care.

Although this is an obvious conclusion, based on the events in these two cases, other government-initiated reports have also recommended that standards be set in order to measure outcomes as a way of ensuring the delivery of quality health care. In Alberta

the provincial government established an advisory council to report on the health care system, with an emphasis on enhancing quality and continuing sustainability. Alberta (2001) released *A Framework for Reform: Report of the Premier's Advisory Council on Health*, also known as the Mazankowski Report, which recommended that standards be set so that health care outcomes can be measured and quality of care monitored.

Also in 2001 the Privy Council of Canada called for a commission on the future of health care in Canada, to consider the sustainability of, accessibility to, and quality of the public health care system. The final report, commonly known as the Romanow report, was released in 2002. One of the many recommendations was that there be a structure put into place to measure the quality of health care provided. The report recommended that Canadian health care outcomes be measured against those of countries belonging to the Organization for Economic Cooperation and Development. The commission noted other health care reports, such as those of the Alberta Premier's Advisory Council, Saskatchewan's Commission on Medicare, and Quebec's Commission d'étude sur les services de santé et les services sociaux, all of which recommended monitoring outcomes to improve quality of care (Commission on the Future of Health Care in Canada, 2002). There was broad agreement that health care administrators must set standards, monitor outcomes, and be accountable to the Canadian public.

Accountability for Organizational Norms

During the initial journaling phase of this study it was noted that several issues had had a direct effect on how the problems(s) were defined and how HCPs attempted to solve the problem(s). These issues are now discussed in the context of the events in the two cases, with reference to selected literature. The *Merriam-Webster Dictionary* (n.d.)

defined *culture* as "the set of shared attitudes, values, goals, and practices that characterizes a company or corporation." Although it was beyond the scope of this study to examine the culture of TSCH or WHSC, certain cultural norms appear to have directly affected the events examined in this study. These norms were in the areas of collaboration and teamwork, communication, documentation, and nursing leadership.

Collaboration and teamwork. There was no evidence in either case that the HCPs were able to collaborate and work together as a cohesive team. In Case I it is apparent that the first two mortality reviews were not so much a search for why the children had died so suddenly as a way for physicians to placate the nurses and 'prove' that there was no problem. In Case II the nurses attempted to collaborate with Dr. Odim when he first arrived at WHSC by asking for his preference cards, inquiring as to what his expectations for perioperative care were, and attempting to arrange for a mock procedure to familiarize him with the OR theatre and introduce him to the staff. Within a short period of time, meaningful communication between the PCS program staff and Dr. Odim had stopped. The team became simply a group of people working side-by-side to deliver a service. The lack of true collaboration and teamwork played a part in the poor patient outcomes (Sinclair, 2000).

In contrast to the lack of collaboration and teamwork found in the two cases in this study, nurses and physicians working in magnet hospitals have collaborative relationships. The workplace is characterized by respect for one another's knowledge and expertise. Together, nurses and physicians work to provide excellent patient care (Havens & Aiken, 1999; Scott, Sochalski, & Aiken, 1999). When collaborative relationships between nurses and physicians exist, along with nurses' ability to make autonomous

decisions regarding patient care, patient mortality rates decrease (Aiken, Clarke, & Sloane, 2002).

Both the Dubin Report (Dubin et al., 1983) and the Sinclair Inquest Report (Sinclair, 2000) made recommendations about collaboration and teamwork. The Dubin Report recommended that executive administration collaborate with medical administrators and that hospital administrators collaborate with nursing and stated that "shared or participatory governance should become the mechanism through which decisions affecting nursing care and nursing personnel are made as opposed to a mere advisory structure" (p. 227). In other words, nurses must have control over nursing issues and become full partners in the health care team.

Justice Sinclair (2000) specifically addressed the need for teamwork. He stated, "Human factors [such as teamwork] play a significant role in contributing to negative surgical outcomes" (p. 496). Specifically, Justice Sinclair thought that team performance could be improved with attention to the following:

- The necessity for team building through a briefing and orientation process that included all players; . . .
- …the planning and the use of standard operating procedures;
- the development of leadership skills;
- the provision for team development or maintenance, emphasizing team communication;
- clarity in the decision-making process;
- a process of conflict resolution;
- …debriefing sessions; . . . and
- a stress management component. (p. 496)

Such collaboration and teamwork can take place only when effective leadership is present.

Communication It is not possible to make an accurate assessment of the communication that occurred between HCPs in Case I because information about such

communication is lacking. In Case II there were many problems with communication. The Sinclair Inquest Report (Sinclair, 2000) addressed communication indirectly. For example, there was no communication between the Department Head, Surgery, and the Section Head, CVT Surgery, regarding the start-up of the program when Dr. Odim arrived. There was no communication between either of these two individuals and Dr. Odim regarding any aspects of his practice. Hospital administrators did not communicate with HCPs regarding the lines of authority and responsibility for the PCS program. Hence, many HCPs reported their concerns to the Section Head, Pediatric Surgery, who did not have any authority over or responsibility for the PCS program. At no time before or during the PCS program restart did hospital administrators at any level demonstrate leadership accountability by clearly communicating hospital structure and expectations of the program. Administrators were unresponsive to repeated reports of observations and concerns.

In both cases there was no communication between senior medical administrators and executive administrators about the problem. Nor was there communication between physicians, including medical administrative officials, and the various committees that would have had an interest in the events as they occurred, such as MAC and RMC.

The Sinclair Inquest Report (Sinclair, 2000) did not contain any specific recommendations about communication. The Dubin Report (Dubin et al., 1983) contained several general recommendations to improve communications within TSCH. These included more frequent meetings of medical staff, regular meetings of each department and division, and a monthly newsletter from the Executive Director to staff. The report stated, "Information must move unencumbered and uninhibited, vertically and

horizontally. This is essential to the effective operation of any institution. . . . Communication must be clear, comprehensive and timely" (p. 213). This statement clearly and succinctly describes the communication that needs to take place in all health care institutions.

Documentation. The issue of documentation did not arise during the journaling process, but became apparent later. In both cases, there was no evidence that the reporting to administrative officials took any form other than verbal. There is no record of any letter or memo written by nurses documenting problems observed and/or experienced. Both the Dubin Report (Dubin et al., 1983) and the Sinclair Inquest Report (Sinclair, 2000) are critical of the fact that no incident reports were completed. Additionally, in Case II many of the problem incidents were not documented on the patient's chart and should have been (Sinclair, 2000). Written documentation is vital. As Hibberd (1999) noted:

> When views, facts, arguments, and decisions are committed to paper, they become part of the permanent administrative record of a health-care agency. They serve as a paper trail for such events as development of a policy or introduction of change; moreover, a written message is not as susceptible as a verbal message to alteration when it passes from person to person. (p. 556)

The Dubin Report (Dubin et al., 1983) observed that incident reports were completed by staff when they were aware that an error had been made. However, no incident reports were made about other unusual or serious incidents, such as those regarding quality of patient care. In Case II incidents were well defined in the policy and procedure manual as being unanticipated events that "may adversely affect patient care" (Sinclair, 2000, p. 94). This definition would include incidents that have been presented

in this study and many of those presented by witnesses at the Sinclair Inquest. However, like their counterparts in Case I, HCPs in Case II did not complete any incident reports.

Both the Dubin Report (Dubin et al., 1983) and the Sinclair Inquest Report (Sinclair, 2000) made recommendations about incident reports. "Incident reporting should be encouraged, and greater utilization of such reports to bring about remedial action where necessary" (Dubin, et al., 1983, p. 233). Justice Sinclair recommended that "administration ensure that all staff members are made aware of their responsibility to use incident reports and fully chart problems with the process of delivery of care and any complications in the outcome of care" (p. 498).

Justice Sinclair (2000) detailed what would happen when an incident report was completed. The immediate supervisor receiving the report was expected to follow up. Incidents that had "major consequences" were to be forwarded to the appropriate Department Head, who was required to inform the appropriate VP (p. 94). If all of the unusual incidents had been reported, there would have been a clear, unbiased trail of evidence of the problems. Such reporting would have required an administrative response.

Nursing leadership. It is very evident in the findings that nursing leaders were either unable or unwilling to exercise authority and responsibility in both cases. In Case I the nursing leaders were conspicuously absent. There is no evidence as to how they responded to the nurses' reporting of problems. There is no evidence as to what, if any, action the nursing leaders took in an attempt to solve the problem. In Case II the nursing leaders did not act in a decisive way to resolve the problem. When the OR nurses requested that they be relieved of duty in the PCS program, this request was denied with

the rationale that there were no other nurses to take that duty. If the nurses had been empowered to withdraw their services, as the anesthetists did, the program would have been suspended much sooner. Aside from informing the Department Head, Pediatrics, about the nurses' concerns, there is no evidence that the DON provided leadership to improve the quality of patient care or to improve the quality of the nurses' working environment. The VP Nursing took no action at all after the problems within the PCS program were reported. In the absence of strong leadership, the quality of patient care suffered and mortality rates remained high.

There is a growing body of evidence on the importance of visible and effective nursing leaders. Magnet hospitals are characterized by nursing leaders whose staff are given the opportunity to express their concerns. In turn, the nursing leaders are responsive to concerns and support the nursing staff's decisions about patient care. Nursing leaders in the magnet hospitals are patient advocates. These characteristics, in conjunction with those noted previously, effectively decrease the mortality rates (Scott et al., 1999).

In the late 1990s there was a growing concern about the imminent nursing shortage. This concern led Canadian government officials to appoint an expert Advisory Committee on Health Human Resources (2000) to develop a strategy for nursing. *The Nursing Strategy for Canada* was the result. One of its recommendations was the formation of the Canadian Nursing Advisory Committee (CNAC), which was charged with preparing recommendations to improve nurses' work-life quality. The CNAC conducted an extensive review of literature, consulted with experts, and found that a lack

of nursing leadership negatively affected the effectiveness and efficiency of nursing (Canadian Nursing Advisory Committee, 2002).

It is evident that there must be nursing leaders at all administrative levels who are empowered to respond to and support nursing practice issues. In 1983 the Dubin Committee Report recommended that nurses be empowered to participate in decision making when it affects nursing care (Dubin et al., 1983, p. 227). Almost 20 years later Justice Sinclair (2000) recommended that a nursing council

> have representation on the hospital's governing body and be responsible for monitoring, evaluating, and making recommendations pertaining to the nursing profession . . . and nursing care. The Council should also serve as a vehicle through which nurses could report incidents, issues, and concerns without risk of professional reprisal . . . [and] the HSC [should] establish a clear policy on how staff is to report concerns about risks for patients. (pp. 478-479)

For several decades, the Canadian Nurses Association (2001, 2002) has advocated that nurses be involved in decision making at all levels within an institution and that nurses be represented at the executive level of health care administration and involved in strategic planning. The need for procedural mechanisms to address nursing issues and concerns has also been documented.

Discussion

In an article written for *Chatelaine* magazine, Armstrong (2001) likened the nurses at WSHC to the canaries in the gold mines of history. Like the canaries, the nurses, and in Case II the anesthetists, were the first to indicate to hospital administrative officials that there was a problem. In the 19th century, if a gold miner ignored the dead canary and went into the mine, he did so at his own peril. Unlike the miners of old, hospital administrative officials did not attend to the messages they received. The

problem of the high mortality rate did not go away, and over a 9- to 10-month period in each hospital many children suffered and died.

The implication for hospital administrators is to recognize that nurses are the first line of defense in the health care system. Nurses' observations and reports of problems require respectful responsiveness and appropriate leadership interventions. In the 1980s research was conducted on hospitals in the United States that were able to recruit and retain nurses during a time of a nursing shortage. The common characteristics of these hospitals included visible and supportive nursing leaders, autonomous nursing practice, decentralized patient care units, nurse members on all committees pertaining to patient care, nurse evaluation, and selected new equipment and supplies; there was also good collaboration with physicians (Haines, 1993; Scott et al., 1999). Furthermore, the nursing profession enjoyed a position of status within the hospitals (Scott et al., 1999), which came to be known as *magnet* hospitals. A decade later further research has confirmed and extended the findings of the earlier studies. This recent research has documented that in hospitals with "magnet" characteristics, the mortality rate is lower, patient stays are shorter, and patients express greater satisfaction with their care (Aiken, Havens, & Sloane, 2000; Scott et al., 1999). One of the reasons for the lower morality rate is that nurses are often the first to recognize complications and intervene. (Havens & Aiken, 1999).

Nurses have been called the "cornerstone of a health care system" (Canadian Nursing Advisory Committee, 2002, p. 8). When nurses with education and expertise report a problem, a wise administrator would seek further information and intervening when appropriate in order to maintain and/or improve the quality of patient care. All

HCPs, including nurses and physicians, need to be aware of standards of care and the expected outcomes against which patient outcomes in a particular program can be measured. Support in the form of organizational structure and norms is necessary to enable HCPs to meet clinical standards and expected outcomes. Professional nurses at all levels must understand the need for accurate documentation and take the time to formally document all incidents that affect the quality of patient care.

Hibberd and Rodger (1999) have noted that "leadership has more to do with acceptance of responsibility than with rank, privilege, title or money" (p. 268). Positions of formal administrative authority should not be accepted lightly by professionals because they carry with them responsibility for leadership and expectations of public accountability. Unfortunately, in the two cases examined in this study, the behavior of most administrators failed to meet basic standards of administrative competence and accountability. Unlike clinical professionals, who may be called to account by their professional regulatory body for serious mistakes, executive-level and senior administrators who are not clinical professionals may never face the consequences of their actions and decisions. If the public is to have confidence in the health care system, executive-level leaders must be accountable for their mistakes.

CHAPTER SIX

CONCLUSIONS, CONTRIBUTIONS, AND RECOMMENDATIONS

For this chapter the thematic similarities between the two cases in this study are reviewed, the contributions of this study are discussed, and recommendations for health care leadership and areas for further study are made.

Conclusions From Both Cases

This study was an examination of events that took place at TSCH from 1980 to 1981 and at WHSC in 1994, with a focus on administrative behavior. One of the most striking similarities is the time period during which these events took place—9 months in Case I and 10 months in Case II. Nurses in both cases identified and defined the infants' deaths as a problem during the first month. Also during the first month the nurses verbally reported their observations and concerns about the unexpected infant deaths to the appropriate individuals in positions of formal responsibility and authority. The conclusions of government initiated review reports confirmed that nurses had correctly identified the severity of the problem. Although a number of people in positions of formal authority had been informed about the unexpected deaths, they did not define them as needing investigation or intervention until month 9 in Case I and month 10 in Case II.

In Case I the RNs focused their attention on the number and unexpectedness of the deaths, but were unable to determine a cause. In Case II the RNs and anesthetists focused on the high mortality and morbidity rates and concluded from their direct observations that the surgeon's lack of skill caused the poor outcomes. In contrast,

medical administrators in both cases believed that the deaths were from natural causes. In Case I this belief continued until the discovery of high levels of digoxin, after which medical administrators, the coroners, and the police defined the problem as murder by digoxin overdose. In Case II medical administrators accepted the mortality and morbidity rates as indicative of a learning curve through which all surgeons work at the beginning of their careers. In month 12 the medical administrators were informed that the mortality and morbidity rates were far higher than elsewhere and were not acceptable.

Administrators at various levels committed most of the administrative mistakes described by Hofmann (2002). They ignored the observations and concerns reported by nurses and, in Case II, the anesthetists; they did not seek information or conduct investigations to validate or disprove the concerns. They treated the problem as inconsequential and the parents with disrespect.

Nursing administrators, the head nurses, and the DON are conspicuous only for their lack of leadership and administrative intervention as nurses reported their observations and concerns. There is no evidence that nursing administrators played any leadership role in the events in Case I. In Case II the DON reported the nurses' concerns to medical administrators and the VP Nursing. There is no evidence that the VP Nursing took the action that might have been expected—either to discuss the problem with her administrative counterpart, the VP Medicine, or to report the problem to the CEO. In month 10 the DON indirectly assisted in the suspension of the PCS program when she informed the Department Head, Pediatrics, that the nurses would not be asked to participate in surgery before the Christmas break.

In Case I there was evidence that the number of deaths was higher than previously experienced. There was no evidence to support or refute the belief that the children had died from natural causes. When the high digoxin levels became known in month 9, they were accepted as valid and proof that someone was deliberately administering digoxin overdoses. In Case II there were no statistical data kept that could have been used to support claims by nurses and anesthetists that the surgical outcomes were worse than previously experienced and by medical administrators to support their claims that the mortality and morbidity rates were the same as those at the start of the previous surgeon's tenure. No one obtained statistics about mortality and morbidity from other centers.

In both cases the needs of the parents were not considered, the medical administrators were disrespectful to the parents who expressed concerns about their child's deaths, and the parents were not told about the problems experienced with the cardiac programs.

The media played an important role in defining the problem for the public. In Case I the media labeled the deaths as murder and continued to do so until after the publication of the Grange Commission report. In Case II the media played an important role in informing the parents and the public about the problems in the PCS program and the reaction to the announcement that the PCS program was suspended.

A striking feature of both cases is the lack of written documentation of problems. Hospital administrators, registered nurses, and other HCPs did not document their observations of problems in written form, although the RNs in Case II kept personal records. There were no incident reports completed in either case. There is no evidence in the data sources used that administrators documented the meetings in which the nurses

expressed their concern about observed problems or that any administrative actions were taken. In Case II, documentation on the patient charts was incomplete; that is, many unusual incidents were not recorded. Even the documentation of the Wiseman Committee meetings was not formally recorded.

Contributions of the Study

There have been numerous articles written about these cases in both the general media and professional literature. Both cases have remained in the public consciousness long after their conclusion. In a recent article in the *Edmonton Journal*, Riley (2003) reminded the readers of how Susan Nelles' reputation had been destroyed by the media before any court proceedings were held. In another article announcing the formal recognition of Edmonton as the pediatric cardiac center for western Canada, Ruttan (2003) reminded readers about the closure of the PCS program in Winnipeg in 1994, "after the deaths of 12 children" (pp. B1, B5). The events in Case I helped shape the nurses' behavior in Case II (Sinclair, 2000). There were also fears that the Sinclair Inquest would treat the nurses as suspects, as had happened during the Grange Commission (Sibbald, 1997).

Three contributions of the study are identified here. This is the first study in which these two similar cases, separated by 13 years, have been compared with each other. As described in Chapter Three, there were many contextual similarities in the two case situations. The findings of this study reveal that there were also similarities in administrative and physician behavior toward nurses. Some superficial comparisons have been made between Case II and the Bristol Inquiry—for example, (Davies, 2001)—but no in-depth comparison.

Second, this study is also the first to examine the events from a policy analysis framework and to consider how administrative behavior influenced or failed to influence the events over the 9 to 10 months examined for each case. For Case I previously published articles have primarily been concerned with 'who' committed 'the crime.' Professional commentaries written by nurses and published in professional nursing journals actively sought to promote alternate reasons for the deaths and, at the same time, to demonstrate how other factors may have contributed to the deaths, such as the loss of experienced RNs (RNAO, 1987). In Case II there has been professional commentary on the Sinclair Inquest Report (Sinclair, 2000) itself, how the nurses' observations were treated and dismissed by medical administrators, and the other lessons that could be learned from the Sinclair Inquest Report (Davies, 2001; Fletcher, 2001; Sibbald, 1997). The events in Case II were the subject of a recent doctoral dissertation in which a philosophical perspective was applied to the analysis (Ceci, 2003).

A third contribution of this study is the development of a methodology to organize documentary evidence and create a chronological database from several sources. The database created for this study could be used by another researcher to follow the trail of evidence to confirm the findings of this study (Streubert, 1999; Yin, 1984a). In addition, other researchers could apply this methodology to examine administrative behavior in other cases within complex organizational contexts.

Recommendations

Recommendations from this study are directed to three policy audiences: executive-level administrators, professional leaders, and nursing educators.

Executive-Level Leaders

Executive-level leaders must concern themselves with clinical outcomes and create an organizational climate in which teamwork and respect for patients are paramount values. This study demonstrates that clinicians and administrators need to be connected, because the decisions and actions made by one group have a direct effect on the other. Administrators are charged with the management and leadership of the organization, whereas clinicians are responsible for direct patient care. But administrators and clinicians need to set agreed-upon standards by which patient care can be measured, and clinicians need to have administrators intervene with leadership behavior when those standards are not being met.

Executive-level administrators are ultimately responsible for the clinical outcomes of the organizations they lead. This study has demonstrated that executive-level administrators were not involved in setting and monitoring clinical standards or administrative standards, and thereby failed in their responsibilities to the children, their parents, and the community.

To meet their overall responsibilities to the governing board and the public, executive-level leaders must assure that they are informed of issues and problems that arise in clinical programs as they develop. They must monitor or initiate administrative processes that are designed to provide important data for risk management and quality assurance. For example, in Case II the executive-level leaders failed to ensure that the

legal requirement be met that autopsy reports be completed within 30 days of the autopsy. Executive-level leaders must also monitor the nature and effectiveness of the peer review and supervisory responsibilities delegated through board policy or provincial legislation to medical committees and administrators.

Executive-level leaders must reflect an organizational commitment to quality improvement. Most health care professionals are self-governed and have some form of peer review. Mortality and morbidity rounds have traditionally created a mechanism for review of errors and unusual incidents as a way to keep physicians accountable (Gawande, 2002). In Case I there were weekly mortality and morbidity rounds throughout the nine months that have been examined in this study (Dubin et al., 1983). In Case II the mortality and morbidity rounds were not well attended, and the anesthetists gave evidence that this was not the venue to discuss problems encountered in the OR (Sinclair, 2000). However, this was a process internal to the physicians directly involved in the case, and it did not lead to information-seeking activities or problem definition that might have resulted in actions and prevented further deaths. In order for a professional and/or a program team to be accountable and responsible for outcomes, it is essential that regular, formal review of problems, concerns, and outcomes be conducted by the entire team.

One example in which standards and review of professional practice have been integrated is the Cranial, Osseointegration, and Maxillofacial Prosthetic Rehabilitation Unit (COMPRU) at the Misericordia Hospital in Edmonton, AB. COMPRU was the first publicly funded health program in Canada to be awarded ISO9000 registration, which requires both structural and process standards that ensure the quality of the program. The

person noticing a deviation from standard practices must report the deviation. If the person receiving the report is unable to correct the deviation, the report is passed to someone with more authority (Smith et al., 1999). Such involvement by all of the team members ensures that the COMPRU program maintains good outcomes. In order for quality management practices to be more than a management fashion, they must become part of normal management practices and "integrated with the basic managerial process of strategy determination, policy deployment, budget cycles, human resources systems, and so on" (VanDer Wiele et al., 2000, p. 75). Quality management practice must not require a special structure in order to run the program; it must not be approached as a project with a start and end points. The program must be part of all normal functions of the institution; quality management must be part of all management meetings; and activities relating to quality management practices must be considered a normal process (VanDer Wiele et al., 2000).

Executive-level leaders should consider the body of evidence from the magnet hospital research and subsequent related studies when structuring health care organizations. Evidence from the original and later studies showed that hospitals with magnet characteristics were able to retain a professional nursing workforce during an acute nursing shortage. Recent studies have demonstrated a strong link between magnet hospital characteristics and health outcomes: a lower mortality rate and shorter ICU stays (Aiken et al., 2000; Clarke & Aiken, 2003; Havens & Aiken, 1999; Scott et al., 1999).

During the nursing shortage of the very early 1980s, the American Academy of Nursing conducted a study to discover why some hospitals were not having any problems with recruitment or retention of registered nurses. The study found that these hospitals

had certain characteristics that attracted nurses, and the hospitals became known as 'magnet hospitals.' Since the original study has been conducted, other research has confirmed the findings (Aiken, et al., 2000; Havens & Aiken, 1999). Magnet hospitals are characterized by a visible and effective nursing leadership who exhibit a participatory management style, horizontal organizational structure, autonomous nursing practice, policies that originate from front-line staff, a professional model of patient care, delivery of quality care, commitment to quality improvement, adequate access to consultants, an emphasis on the teaching role for the RN, holding the nursing profession in esteem, collaborative and respectful relationships between nurses and physicians, and a commitment to professional development. The American Nurses Credentialing Centre now has a Magnet Recognition Program that awards 'Magnet' status to hospitals applying for the designation that meet the criteria for excellence (Monarch, 2005).

Hospital Administrators and Health Care Professionals

All health services administrators and health care professionals at all levels of the organizational structure share responsibility for ensuring that documentation about patient care is complete. It has long been accepted practice to record all unusual and untoward incidents and related decision making on the patient's chart as well as on an unusual incident report form to provide a complete record of care. It is also important that HCPs, including nurses, document concerns about care processes in writing. Clearly written, objective information assists in defining a problem and provides a trail of evidence. This is important for frontline HCPs and those in administrative positions.

Canadian courts view patient chart documentation as the foundation from which to plan care, as a tool for communication between HCPs, as a way to document the care

provided and the patient's response, and a way to evaluate the quality of care. The absence of a written record of events indicates that nothing occurred (Picard & Robertson, 1996).

Administrators also have responsibility for documenting meetings and decisions. Appointment diaries are one source of information about meetings held, and assistants generally manage these. However, other forms of documentation can be initiated directly by administrators themselves. These include dictation of written 'notes to file' or brief follow-up communication to participants in meetings to summarise topics discussed and agreed upon actions or next steps.

Professional Leaders

Professional leaders must be competent managers. "Leaders who lack management skills are as much a liability to modern organizations and the communities they serve as are managers who lack the vision of leadership" (Hibberd & Smith, 1999, p. viii). Nursing leaders and managers need more than an ethical awareness of patient-care issues; they need to have a good grasp of basic management practices. As already noted in this study, the lack of written documentation in both cases hampered the ability of nurses to obtain attention and intervention from medical, senior, and executive administration. In Case II the medical administrators formed the Wiseman Committee without the terms of reference or reporting mechanisms that would have ensured investigation and resolution of the problems in the PCS program. Basic administrative skills, such as diarizing meetings, team building, and teamwork, were also absent behaviors in Case II. These basic management skills are critical when situations such as those in this study develop.

Current Canadian thinking on the subject of leadership skills, values, and behavior (i.e. the competencies of health service executives) is largely congruent with Huffman's framework. The Canadian College of Health Service Executives (1993) has proposed competencies necessary for professional health leaders. They must have the ability to lead individuals and groups, have excellent written and verbal communication skills, and possess the ability to listen to delivered messages. Professional leaders should be committed to lifelong learning. It is vital that leaders be responsive to patients, clients, and the community at large. The ability to identify and analyze developing situations and problems in order to respond appropriately is necessary. Leaders must both make plans and evaluate outcomes. Finally, it is imperative that professional leaders adhere to standards of practice, ethics, and the law.

Nursing Education

Nursing educators must prepare leaders with managerial skills and an understanding of organizational structure. There are many competing demands on nursing education. This study points to areas in which both frontline nurses and nursing leaders need basic education in order to provide optimal patient care.

Education for Nursing Leaders and Health Care Administrators

Programs for health services leadership must provide the opportunity to learn basic management concepts, ethical principles, and legal obligations. In the two cases examined in this study, no one reported the problems to MAC, which has a legal obligation to ensure quality patient care. Legal mandates were violated when the completion of autopsy reports in Case II was allowed to occur later than required by provincial regulations. It is important that health care administrators understand the legal

precepts under which they practice. The findings of this study point to the need for nurses and health care administrators to have a basic understanding of the legal obligations of administrators to the employees, others working within the institution, and clients accessing services.

Education for Frontline Nurses

Basic nursing programs must prepare nurses to work in political environments and assist them to understand the reporting structure of the health care institutions and their importance. Nurses who deliver direct client care also need formal education to prepare them to work in complex, political environments. Nurses in both cases in this study did not formally document their observations and concerns and did not complete incident reports. In so doing they lost an opportunity to provide explicit, concrete evidence that there was a problem needing medical administrative intervention. Teams deliver much of patient care, and nurses need to be taught the skills necessary for the effective functioning of the team, including conflict resolution. Justice Sinclair (2000) recommended that there be clear lines of authority so that everyone can understand the reporting structures. Nurses need to understand the importance of the reporting structure to enable them to report their observations and concerns to the most appropriate person. Nurses also need to have a clear understanding of the various avenues available to address patient care concerns, whether they be established by institutional authority, by codes of ethics, or by union contract. Nursing leaders within both educational and health care institutions need to ensure that nurses delivering patient care have an opportunity to learn such skills and that their observations and reports are treated with respect.

Suggestions for Further Research

The findings of this study point to the need for further research into the culture and administrative structure of the two hospitals in this study. The data sources used did not permit conclusions to be drawn regarding the effects of institutional culture and administrative structure. However, information about the administrative structure may be found in the archival materials of the hospitals. Interviews with stakeholders would provide an understanding of the culture and how the administrative structure affected the events. Archival and interview data could be examined to extend the findings and conclusions of this research or could be included as data sources in other similar studies.

Expanding this study to include contextual factors such as administrative structure and culture would provide a richer description of the events and greater understanding as to how the events occurred unchecked for almost a year. As noted elsewhere in this study, the Bristol Royal Infirmary Inquiry (2001) examined events at the Bristol Royal Infirmary that were similar to the events in Case II. A comparison of the Bristol Inquiry to the two cases in this study would assist in better understanding how such events occur. There may be other cases in which mortality and/or morbidity rates have been unusually high that could also be examined and compared.

Organizational and professional practices in relation to incident reports require further exploration. Health care organizations have policies regarding unusual incidents, which include criteria for defining unusual incidents. Structured incident report forms are readily available, and all care providers and employees are assumed to be responsible to report incidents observed. Therefore, the absence of incident reports in these two cases is a compelling fact and difficult to understand. It is not known whether in other hospitals

with different leadership and organizational norms, incident reports on events such as those described in this study would have normally been completed. It is not known whether incidents involving medical care are routinely documented by other HCPs in incident reports, or by physicians or their peers. To the extent that incidents involving physicians are not documented with all others, data for improving patient safety are incomplete. Therefore, broader studies of organizational and physicians' professional practice are needed.

The 2003 SARS (severe acute respiratory syndrome) epidemic caused some concern within the nursing community as the epidemic spread (Branswell, 2003; Fletcher, 2003). The SARS epidemic is an example of an event to which the methodology of this study could be applied in order to gain insights into how problems are reported and to determine the responsiveness of those receiving the reports.

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APPENDIX A

DEFINITIONS

Appendix A

Definitions

Word	Definition for this study
Case I	Case I refers to the events occurring at TSCH on Ward 4A/B in 1980-1981 that are the subject of this study.
Case II	Case II refers to the events occurring at WHSC pediatric cardiac surgical program in 1994.
Children	The nonmedical term referring to patients who have not reached the developmental stage of adulthood and includes 'infants' and 'neonates.'
Clinical fellows	"Are physicians with specialty qualifications who are undertaking specific further advanced studies" (Dubin et al., 1983, p. 79)
Critically Ill	Refers to those who need quick and constant medical attention.
Department Head	In Case II, the Department Head referred to the senior administrative position responsible for a particular medical service. For example, there was a department head for surgery, responsible for the surgeons.
Executive Administration (or administrator)	Refers to those the President or Chief Executive Officer and those who report directly to these individuals.
Government-initiated judicial proceedings	The Dubin Report, Grange Commission and Sinclair Inquest were all initiated by provincial governments. All of these proceedings were a form of enquiry, but are not public inquiries.
Incident report (a.k.a. unusual incident report)	Incident reports are part of quality assurance or risk management programs and their purpose is to review and evaluate patient care. An incident is often "an unfavorable deviation of expectations involving patient care" (Guido, 2001, p. 187). At WHSC the incident reports included unusual occurrences to staff and visitors. The Dubin Report (Dubin et al., 1983) noted that incident reports were most often used for reporting of errors rather than other problems that might indicate a problem with patient care.

Word	Definition for this study
Infants	Aged less than 2 years, includes neonates
Interns (Resident I)	"Medical graduates completing the necessary training for licensing purposes" (Dubin et al., 1983, p. 79)
Medical Advisory Committee (MAC)	The "senior patient care committee responsible for advising the board on all matters concerning medical policy and issues" This included "establishing and maintaining standards of medical practice" (Sinclair, 2000, p. 88). The MAC at TSCH was to "provide supervision over the practice of medicine…make recommendations to the Board concerning the quality of medical care provided…advise…in all matters pertaining to the medical, nursing and paramedical services" (Dubin et al., 1983, pp. 59-60).
Morbidity and Mortality Rounds (M & M rounds)	M & M rounds occur regularly as a way for physicians to review deaths and unusual complications, which have occurred. Both the Grange Commission report and the Dubin Report mention that these occurred weekly on Ward 4A & 4B. In addition, a more formal mortality reviews were conducted in September 1980 and January 1981. At WHSC, the M & M rounds also occurred weekly, but were not well attended nor did the anesthetists believe that these were helpful in reviewing the cause of the children's deaths (Sinclair, 2000).
Neonates	Dubin Report defined neonate as a baby aged 28 days and younger (Dubin et al., 1983, p. 12) Justice Sinclair: defined neonate as a baby less than 6 weeks of age (Sinclair, 2000, p. 45). In this study, neonate refers to babies aged 28 days and younger.
Pediatrics	The medical class defining patients who have not reached the developmental stage of adulthood. Includes infants, children, adolescents, and sometimes neonates.
Pediatric cardiology	Responsible for "the identification and diagnosis of heart defects and heart disease"…(Sinclair, 2000, p. 47) in children.

Word	Definition for this study
Pediatric cardiac surgery	Surgery within and around the child's heart. Open heart surgery usually involves opening the heart wall and blood flows through a bypass machine rather than the heart.
Policy analysis	"[Using] multiple methods of inquiry and argument to produce and transform policy-relevant information that may be utilized in political settings to resolve public problems" (Dunn, 1981, p. 60).
Policy problem	"An unrealized need, value, or opportunity which, however identified, may be attained through public action" (Dunn, 1981, p. 60
Portfolio structure	The grouping together of one kind of service, clinical and non-clinical, under one leader; or the representation of one type of service. For example, under a portfolio structure, all nurses are part of a single department, with a single nurse representing the portfolio. Within the portfolio there may be many departments, such as the surgical department, and each department has a head. Departments themselves maybe further subdivided. For example, within the WHSC the surgical department had a pediatric surgical division
Problem definition	"The processes by which an issue (problem, opportunity, or trend), having been recognized as such and placed on the public policy agenda, is perceived by various interested parties; further explored, articulated and possibly quantified; and in some but not all cases, given an authoritative or at least provisionally acceptable definition in terms of its likely causes, components, and consequences." (Hogwood and Gunn, 1984; as cited in Rochefort & Cobb, 1993, p. 57). "The process of characterizing a substantive problem in its most basic and general terms" (Dunn, 1994, p. 185).
Problem Structuring	"To discover the critical elements of a problem, their causal arrangement, and value implications" (Dunn, 1994, p. 185). "The policy-analytic method used to produce information about the nature of a problem and its potential solutions" (Dunn, 1981, p. 60).

Word	Definition for this study
Program administrative structure or (matrix administrative structure)	This administrative structure brings together all those working in one particular program. This means that all clinical and support staff working in a program report to the same person(s). This means that physicians, nurses, technicians, clerical and housekeeping staff would all report to the same person(s).
Residents	"Are fully qualified physicians pursuing post-graduate training in a specialty" (Dubin et al., 1983, p. 79)
Retrospective policy analysis	"The production and transformation of information after policy actions have been adopted" (Dunn, 1981, p. 60).
Section Head	In Case II, the Section Heads reported to a Department Head and were responsible for a particular section of the medical service. For example, within the department of surgery, there was a section of pediatric surgery.
Senior administrator or administration	In this study, senior administrators are those who report to a Vice President or to a person who reports directly to an executive administrator.
Sentinel event	"An unexpected occurrence involving major economic or noneconomic losses adversely affecting patients or others or having the potential of leading to serious negative consequences" (Hofmann, 2002, p. 10).
Team (TSCH)	"Denotes a group of nurses working together on the same rotation in a particular unit." (Dubin et al., 1983, p. 99) Team leaders provide relief for breaks and assistance where needed.
Team (WHSC)	In this study, a team is a group of HCPs who work collaboratively together in order to provide a particular service.
Unexpected deaths	Deaths that may or may not be an expected outcome, but were not anticipated at the time they actually occurred. "Although these patients were seriously ill and death in the future not completely unexpected, their deaths were not expected at that time" (Dubin et al., 1983, p. 136). "The moment in time when the patient would pass away may not have been anticipated" (Dubin et al., 1983, p. 161).

Word	Definition for this study
	Dr. Trusler as quoted in Grange (1984): "all deaths where death was not inevitable" (Grange, 1984, p. 13).
	In this study, "unexpected death" means that the death was unexpected when it occurred and under the circumstances which it occurred.

APPENDIX B

ACRONYMS

Appendix B

Acronyms

CV	Cardiovascular
CVT	Cardiovascular Thoracic
CME	Chief Medical Examiner
CNS	Clinical Nurse Specialist
DON	Director of Nursing
HCP	Health Care Professionals
ICU	Intensive Care Unit
MAC	Medical Advisory Committee
NICU	Neonatal Intensive Care Unit
OR	Operating Room
PCS program	Pediatric Cardiac Surgical program
PICU	Pediatric Intensive Care Unit
QA	Quality Assurance
QAC	Quality Assurance Committee
RN	Registered Nurse
RNAO	Registered Nurses Association of Ontario
Dubin Report	Report on the Hospital for Sick Children
Sinclair Inquest	Report of the Manitoba Pediatric Cardiac Surgery Inquest: An Inquiry into Twelve Deaths at the Winnipeg Health Sciences Centre
RMC	Risk Management Committee
Grange Commission	The Royal Commission of Inquiry into Certain Deaths at the Hospital for Sick Children
TSCH	Toronto Sick Children's Hospital
VP or VPs (for the plural form)	Vice President
WHSC	Winnipeg Health Sciences Centre

APPENDIX C

LIST OF KEY PERSONNEL NAMED IN THE LITERATURE AND IN THIS STUDY

Appendix C

List of Key Personnel Named in the Literature and this Report

List of Key Personnel at TSCH

Name*	Position
RN Nelles (Cox, 1983a)	Ward 4A Staff Nurse
RN Trayner (Cox, 1983a)	Ward 4A Team Leader
RN Brown (Cox, 1983a)	Ward 4A and 4B Clinical Nurse Specialist
RN Radojewski	Head Nurse Ward 4A
RN Costello	Head Nurse Ward 4B
Dr. Rowe	Director, Division of Cardiology
Dr. Trusler	Director, Division of CV Surgery
Dr. Carver	Chief of Pediatrics
Dr. Cutz	Senior Pathologist
Dr. Mancer	Senior Pathologist
Dr. Bunt	Coroner (for A. Dawson)
Dr. Tepperman	Coroner (involved in month 9)
Dr. Bennet	Acting Chief Coroner (involved in month 9)
Mr. K. Rowe	Executive Administrative Official
Mr. Snedden	Executive Administrative Official
S/Sgt. Press	Homicide Detective
Sgt. Warr	Homicide Detective
Ms Dawson	Mother of deceased child, Amber Dawson

*Grange (1984), unless otherwise noted

List of Key Individuals at WHSC

Name*	Position
RN Borton	Staff nurse, Variety Children's Heart Centre
RN Hinam	Anesthetic Nurse
RN Youngson	OR nurse in charge of PCS
RN Dixon	Head Nurse, OR
RN Feser	Acting Head Nurse, PICU
RN Boyle	Director of Nursing, Pediatrics & Child Health
	Director of Patient Services, Pediatrics and Child Health as of June 1, 1994
Dr. Swartz	Anesthetist
Dr. MacNeill	Sub-Section Head, PCS Anesthesia
Dr. Odim	Sub-Section Head, PCS Program
	Pediatric Cardiac Surgeon
Dr. Giddins	Acting Section Head, Pediatric Cardiology
Dr. Kesselman	Section Head, PICU
Dr. Seshia	Section Head, NICU
Dr. Ullyott	Section Head, Pediatric Anesthesia
Dr. Wiseman	Section Head, Pediatric Surgery
Dr. Bishop	Department Head, Pediatrics until May 31, 1994
Dr. Blanchard	Department Head, Surgery
Dr. Craig	Department Head, Anesthesia
Dr. Postl	Department Head, Pediatrics as of September 15, 1994
Dr. Sutherland	VP Medicine to June 1, 1994
RN VanDeVelde-Coke	VP Nursing to June 1, 1994 VP responsible for Surgery and Anesthesia as of June 1, 1994
Ms. Wright	VP Pediatrics as Child Health as of June 1, 1994
Mr. Thorfinnson	President and CEO

*Sinclair (2000), unless otherwise noted.

APPENDIX D

WHSC ADMINISTRATIVE STRUCTURE TO MAY 31, 1994

Appendix D
WHSC Administrative Structure to May 31, 1994

Board of *Directors*

All board members were appointed: five by the Manitoba Government, two by the University of Manitoba, one by the Manitoba Cancer Treatment Centre, one by the Children's Hospital Research Foundation, eight by the board itself.

The President of Medical Staff and the Dean of Medicine (U of M) were also directors, by virtue of their office.

President and Chief Executive Officer

Appointed by the board

Responsible for: organizational structure, assists with setting strategic direction, sets "standards and principles which determine how the hospital is to conduct its affairs"; ensures the hospital complies with government statues and regulations (Sinclair, 2000, p. 79).

Vice President Corporate Planning	Vice President Communications and information systems Reports to VP Planning	Vice President Medical (Dr. Sutherland)	Vice President Nursing (RN VanDeVelde-Coke)	Vice President Operations	Vice President Finance	Vice President Human Resources

Medical Departments	Nursing Divisions
(Each department had a department head and reported to VP Medical)	*(Each division had its own director, who reported to the VP Nursing)*
Anesthesia (Dr. Craig)	Surgical Nursing
Clinical Chemistry	Medical Nursing
Clinical Microbiology	Psychiatric Nursing
Community Health Sciences	*Pediatrics and Child Health (RN Boyle)*
Emergency	Adult Ambulatory Care
Medicine	Obstetrics and Gynaecology
Obstetrics and Gynaecology	
Ophthalmology	
Otolaryngology	
Pathology	
Pediatrics and Child Health (Dr. Bishop until Jun 1; Dr. Postl as of Sept 15th)	
Psychiatry	
Radiology	
Surgery (Dr. Blanchard)	

(table continues)

Vice President Medicine (Dr. Sutherland)				
Department of Surgery (Dr. Blanchard)	Department of Anesthesia (Dr. Craig)	Department of Pediatrics and Child Health (Dr. Bishop)		
Section: Cardiovascular and Thoracic Surgery (Dr. Unruh) Service: Pediatric Cardiac Surgery (Dr. Odim) *(Service chief reports to section head)* Perfusionist service also reported to Blanchard	Sections: Pediatric anesthesia (Dr. Ullyot) Sub section: Pediatric Cardiac anesthesia (Dr. McNeill, May 16, 1994 and on) Other sections not applicable here	Sections: Pediatric Cardiology (Dr. Giddins) Pediatric Surgery (Dr. Wiseman) *[Pediatric surgery also reported to the Department of Surgery Head]* Pediatric Intensive Care (Dr. Kesselman) Neonatal Intensive Care (Dr. Seshia) Others not applicable here		
Vice President Nursing (RN VanDeVelde-Coke)				
Director of Pediatrics and Child health Nursing (RN Boyle)				
Operating Room Head Nurse (RN Dixon) Senior nurse in charge of cardiac surgery (Youngson)	Anesthetic Nurse (RN Hinam)	PICU Head Nurse (RN Feser)	NICU Head Nurse (RN Russell)	Variety Children's Heart Centre (RN Hawkins, senior nurse clinician)

(table continues)

Board of Directors (Sinclair give no indication that the make up of the Board changed in any way)			
President and Chief Executive Officer			
Vice President (Sutherland)	Vice President (RN VanDeVelde-Coke)	Vice President (Ms Wright)	Vice President (Not named, not applicable)
	Medical Departments reporting to RN VanDeVelde-Coke: Surgery (Dr. Blanchard) Anesthesia (Dr. Craig)	Medical Departments reporting to Wright: Pediatrics and Child health (Various until Sept 15/94 Dr. Postl Sept 15/94 on)	

All four Vice Presidents were responsible for medical and non-medical divisions.

Vice President Responsible for Pediatrics and Child Health Service Division (Ms Wright)				
Director of Patient Services (Pediatrics and Child health) (RN Boyle)				
Unit Managers Other Units Not applicable here	Unit Manager: Operating Room (RN Dixon) Senior nurse in charge of cardiac surgery (RN Youngson) Anesthetic Nurse (RN Hinam)	Unit Manager PICU (RN Link) (RN Link returned from a leave on Jun 1/94, and resumed her position from RN Feser).	Unit Manager NICU (RN Russell)	Variety Children's Heart Centre (RN Hawkins, senior nurse clinician)

APPENDIX E

CHRONOLOGY OF COMMUNICATION

OCTOBER 1980-1981 AT TSCH

Appendix E

Chronology of Communication October 1980-1981 at TSCH*

Date	Communication from	Communication receiver	Contents of communication	Response
September 1980			*Two children die*	
October 1980			*Three children die*	
October 1980	Staff Nurses	Unknown	Nurses complain physicians are not communicating the seriousness of patients' conditions (Cox, Dec 21/83)	Unknown
November 1980			*One child dies*	
Fall 1980	Cardiovascular Surgeons	Unknown	Expressing concerns about the number of infants dying post-operatively	None
December 1980			*Five children die*	
December 1980	Director of the Division of Cardiovascular Surgery	Director of the Division of Cardiology	Concerned that children who survived surgery, died after discharge from ICU, when survival was expected	Conference of January 12 1981.
January 1981			*Two children die*	
January 12 1981	-Director of the Division of Cardiology -Director of the Division of Cardiovascular Surgery -Deputy Director of ICU -DON -Senior Nurses	Conference	Discussed 20 deaths and categorized them: Terminal: 2 Expected: 4 Unexpected before OR: 5 Unexpected after OR: 9 (Other: 2)	Report on recommendations finished March 12 and submitted to Program Advisory Committee on April 15

(table continues)

Date	Communication from	Communication receiver	Contents of communication	Response
	-Unnamed Surgeon -Unnamed Cardiologist -Unnamed fellow in cardiology		Physicians not cognizant that most of the deaths occurred when one particular team was on duty. Recommended: an intermediate ICU Timely access to OR Drug Dosage chart for crash carts Splitting up the Trayner team; Head Nurse refused (Dubin et al., 1983).	
January 1981	Unknown	-Acting Administrator -Chief of Pediatrics -Others unnamed	Copy of the minutes of the January 12th conference	None
February 1981			*Three children die*	
March 1981			*Ten children die*	
March 16 (or 17 or 18, uncertain) 1981	Senior Cardiologist	Coroner	Kevin Pacsai's digoxin levels above therapeutic range	
March 18	Head Nurse	Staff nurse	Inquest ordered to review Kevin Pacsai's death	
March 20 (uncertain)	Senior Pathologist	Senior Pathologist	Kevin Pacsai's high digoxin levels	Dr. Mancer remembers the high levels of digoxin in Janice Estrella's blood. Estrella died January 1981
March 20 (uncertain)	Senior Pathologist	Biochemist	Discuss validity of Janice Estrella's high digoxin level	

(table continues)

Date	Communication from	Communication receiver	Contents of communication	Response
March 20 (uncertain)	Senior Pathologist	Coroner	Janice Estrella's death and high digoxin level	
March 21	Associate Biochemist	-Director of the Division of Clinical Pharmacology -Chief Pediatric Resident	Elevated digoxin levels found at another child's autopsy	
March 21	Coroner	Acting Chief Coroner	High digoxin levels at autopsy	Acting Chief Coroner calls homicide detectives
March 21	Chief of Pediatrics	-Senior Cardiologist -Chief Pediatric Resident -Physician -Coroner	Digoxin to be a controlled drug	Two physicians went to all wards to remove digoxin from crash carts
	Acting Chief Coroner	-Director, Division of Cardiology ; -Senior Cardiologist -Chief of Pediatrics; -Regional Coroner; Coroner; -Administrative officers; -Homicide Detectives,	Meeting to decide how to handle the finding of high digoxin levels in the infants Queried the need to place Trayner's team on leave	The need for secrecy. Police suggestion of murder Police investigation to start March 23.
March 22	Police	-Chief of Pediatrics -Senior Cardiologist -Director of the Division of Cardiology -Administration officials -Nursing representatives (unnamed)		Investigation became murder investigation The fourth autopsy showed high levels of digoxin RN Trayner's nursing team placed on leave

(table continues)

Date	Communication from	Communication receiver	Contents of communication	Response
March 22 (or 23)	Chief of Pediatrics	To all staff	Nursing supervisors to give meds on Ward 4A/B Daily digoxin levels on all patients No elective admissions to Ward 4A/B	
March 23	Chief of Police Acting Chief Coroner Doctors Administrative staff		Discussed all deaths since July 1980	
March 23	Staff nurses head nurse, 4A		Meeting to discuss Kevin Pacsai's death and inquest	Head Nurse did not inform staff of police investigation
March 24	Police	-Administrative officials -Physicians -Senior Nurses	Meeting to discuss the administration and effects of digoxin Discussed the roles, work and schedules of nurses, residents and fellows	None
March 24	Acting Chief Coroner Police	-Director of Division of Cardiology -Executive Director -Acting Administrator	Meeting to inform THSC about progress of investigation Inform of plan to interview Nelles and suspicions on her	
March 25				RN Nelles arrested and charged with murder and on March 27, additional three charges of murder.

*All information for this chart is from Grange (1984), unless otherwise noted.

APPENDIX F

SUMMARY OF COMMUNICATION

MAY 1994 - FEBRUARY 1995 AT WHSC

Appendix F

Summary of Communication May 1994 - February 1995 at WHSC

Date	Communication from	Communication receiver	Contents of communication	Response
Late April	Staff Nurse, OR	Head Nurse, OR	Request to be removed from PCS program	Request denied because of a lack of nurses
Late April or late May (uncertain date)	Director of Nursing	Department Head, Pediatrics	Nurses concerns regarding the PCS program: trouble with cannulation, excessive bleeding, mortality and morbidity	None Believed the statistics were similar when previous surgeon began practice.
May 1994	Director of Nursing	VP Nursing (VP Nursing remembers this meeting occurred in September)	Concerns expressed about PCS program	None
May 1994	Head Nurse, OR	Section Head, Pediatric Surgery	Concerns expressed about PCS mortality	None, believed mortality similar at the start of previous surgeon's tenure.
Mid May 1994	Section Head, Pediatric Surgery	Pediatric Cardiologist	Meeting to review cases	None, Pediatric Cardiologist had good reasons for all of the deaths
Mid May 1994	Department Head, Pediatrics	Section Head, PICU	Discussion about PCS program	Section Head, PICU refused to comment on Odim's skills, did say there was a communication problem between Odim and the anesthetists.
Mid May 1994	Department Head, Pediatrics	Pediatric Cardiologist	Discussion about PCS program	Pediatric Cardiologist supported Odim

(table continues)

Date	Communication from	Communication receiver	Contents of communication	Response
May 16, 1994	Sub-section, Pediatric Anesthetists, PCS program		Meeting and discussion about PCS program problems: Mortality and morbidity No monitoring Worsening interpersonal relationships	Unilaterally withdraw services from PCS program. Memo to Section Head, Pediatric Surgery
May 17, 1994	Section Head, Pediatric Anesthesia	-Section Head, Pediatric - Surgery -Department Heads of Anesthesia, Surgery and Pediatrics	Memo reporting anesthetists action	Meeting of May 18
May 18, 1994	Department Head, Pediatrics	-Department Heads -Surgery and Anesthesia -Section Head, Pediatric - Anesthesia -Section Head, Pediatric Surgery -Sub-Section Head, PCS anesthesia -Pediatric Cardiac Surgeon -Pediatric Cardiologist	Meeting to discuss anesthetists action. Reasons given for action: mortality and morbidity, communication and relationship problems	Formation of Wiseman Committee. OR nurse in charge of PCS only nurse member At first meeting, decide that all high risk and neonatal cases be sent to Saskatoon Anesthetists agree to do low risk cases Also that no member comment on areas outside their area of expertise

(table continues)

Date	Communication from	Communication receiver	Contents of communication	Response
May 1994	Staff nurse, WHSC	Cardiologist PCS anesthetists	Requested reassurance as nephew was to have cardiac surgery	Cardiologist said the problems resulted from a learning curve. Anesthetists said to take the child elsewhere
June 1			Reorganization of Administrative Structure	
June and July	Wiseman Committee		Discuss and disagree about resuming full capacity Discuss what cases to do in Winnipeg and which to send to Saskatoon with the pediatric surgeon and cardiologist in disagreement with the anesthetists, Odim deflects poor outcomes and problems by blaming others Cardiologist verbally abusive to anesthetist	None
June 1994	Pediatric Surgeon	Department Head, Anesthesia	Too many anesthetists in the PCS program	None
July 1994	Former Pediatric Surgeon	Section Head, CVT surgery	Suggests Section Head investigates concerns as expressed by OR PCS charge nurse, pediatric cardiologist and perfusionist	None

(table continues)

Date	Communication from	Communication receiver	Contents of communication	Response
July 27	Wiseman Committee		Cardiologist requesting resumption of high risk cases. OR nurse says cases still were not going smoothly, Cardiologist and Surgeon believed RN did not know anything because she was just a nurse	None
Summer	Cardiologist	PCS nurse in charge	Requested specifics on Odim's technique. Given examples	Cardiologist said WHSC was lucky to have Odim, he was well trained
Late July or Early August	Department Head, Anesthesia	Section Head, Pediatric Anesthesia Sub-Section Head, PCS Anesthesia	Questioned why PCS program had not resumed full capacity	None Felt accused of preventing the resumption of full case load. Felt their concerns were not addressed because they were not cardiac surgeons.
August 5	Department Head, Anesthesia	Acting Department Head, Pediatrics Department Head, Surgery	Requesting meeting to discuss Wiseman Committee and its unclear objectives	None
August 10	Wiseman Committee		Report recommending: Resumption full capacity in 6 months No consensus on recommendations; decision made by Section Head, Pediatrics with the backing of the surgeon and cardiologist.	Nurses and anesthetists not able to speak to ability of surgeon

(table continues)

Date	Communication from	Communication receiver	Contents of communication	Response
Sept 6	Section Head, Pediatric Surgery	Department Head, Surgery	Stated risk categories had been decided upon Stated 16 cases had been done successfully, omitted anything about two deaths	None
Sept 8/9	Department Head, Anesthesia	PCS program anesthetists, one-on-one	Requested full participation	Anesthetists said they didn't support full capacity. One suggested that if PCS program wanted good outcomes they needed a good surgeon and Odim was only average.
Sept 22	Section Head, Pediatric Surgery	Department Heads: Surgery, Anesthesia, Pediatrics	Wiseman Committee recommends resumption full capacity	
Sept 26	Pediatric Surgeon	Department Head, Surgery	Various complaints, requests and data Requests an external review of PCS program	Copies of the letter to Department of Anesthesia and Pediatrics sent at the end of October
Sept 30	Department Head, Pediatrics (new appointment)	Department Heads Surgery & Anesthesia	Discussion re: PCS program	
	Department Head, Pediatrics (new appointment)	Section Head, Pediatrics	Requests copy of case reviews	Reply received Oct. 21 Department Head, Pediatrics disturbed by mortality rate.
	Department Head, Pediatrics (new appointment)	Director of Nursing, Pediatrics and Child Health	Requesting information about nursing concerns	DON replies orally that nurses still have concerns

(table continues)

Date	Communication from	Communication receiver	Contents of communication	Response
Oct 28	Department Heads Surgery, Pediatrics, Anesthesia Section Head, Pediatric Surgery	Regular Meeting	Anesthetists continued to be concerned Nurses concerns more than emotional response to poor outcomes Distribution of Odim's letter	None
Fall	Department of Surgery Head	Physicians involved with PCS	Questions about Odim's abilities	Various, none said poor
	DON	Section Head, Pediatric Surgery	Requests he scrub on another case	Refused
	DON	VP responsible for Surgery and Anesthesia	Nurses and anesthetists still had concerns	None
November 9	Department Head, Anesthesia	Department Head, Surgery	Written recommend external review of PCS program	
November 25	Some staff present at Maguire's surgery	Pediatric cardiologist Department Heads: Anesthesia Pediatrics	Problems with Maguire's surgery	
After November 25	PCS charge nurse	DON	Problems with Maguire's surgery	
After November 25	Sub Section Head, PCS (surgeon)	Pathologist	Information given by anesthetists not accurate (anesthetist information accurate)	None
November 28	Department Heads	Regular Meeting	Discuss holding external review	No decision made
November	Parents' of child who died in September	Section Head, Pediatric Cardiology	Question reason for child's death Question surgeons abilities and skills	Parents informed child died from fluid in lungs (not the full truth)

(table continues)

Date	Communication from	Communication receiver	Contents of communication	Response
End of November	Staff nurses and anesthetists	Informal conversations with each other	No one involved with the PCS program would let their child undergo cardiac surgery in Winnipeg	
End of November	Anesthetic Nurse	Department Head, Pediatrics	Ethical conflict if no staff member would have their child in the PCS program	None
Dec 5	Department Head, Surgery	Meeting with Section Head CVT surgery Pediatric Surgeon		Informs Odim that another cardiac surgeon with some pediatric training will assist in all high risk and neonatal cases
Dec 9	Section Head, Pediatric Anesthesia	Department Head, Pediatrics	Anesthetists continue to have concerns about the PCS program	None
Early December	Department Head, Pediatrics DON	VP responsible for Pediatrics and Child Health	Question how to shut down program Concerns of the nurses	To do so via MAC Need statistical evidence VP under impression problems were interpersonal and communication
Dec 21	Section Head, NICU	Department Head, Pediatrics	NICU would have trouble referring clients to the PCS program	No immediate response
Dec 21	Department Head, Pediatrics	Section Heads: NICU, Pediatric Anesthesia, PICU, Pediatric cardiologist	Special Meeting to discuss NICU and anesthetists concerns	Decide to shut down PCS program

(table continues)

Date	Communication from	Communication receiver	Contents of communication	Response
After Dec 21	Staff Nurse, OR	DON	Will no longer be involved in program	DON informs Department Head, Pediatrics nurses not able to do surgery booked for Dec 21 & 22
Dec 22	Department Head, Pediatrics	VP responsible for Pediatrics Department Head, Anesthesia & Surgery	Informed PCS program shut down	
Dec 22	Department Head, Surgery	Pediatric Surgeon	Informed PCS program shut down	
January 1995		Physicians involved in PCS program invited to submit report for external reviewers. Nurses included after DON asked for their participation External review completed		
Feb 3 1995	External Reviewers	Department Head, Surgery	Williams and Roy Report	Meeting with other Department Heads
Feb 9	Department Heads, Pediatrics, Surgery, Anesthesia	Meeting	Discuss Williams and Roy Report	Decide to explore alternatives over six months
Feb	Department Head, Anesthesia	CEO	PCS is shut down while alternatives explored	None immediately

(table continues)

Date	Communication from	Communication receiver	Contents of communication	Response
Feb 13	Department Heads CEO MB government officials		Discuss options and alternatives Department heads want to reorganize with a different surgeon Deputy Minister of Health questioned if population base supports a PCS program.	Suspend PCS program with announcement Feb 14th. Inform Odim he would not be pediatric cardiac surgeon after reorganization
Feb 14	WHSC	Press release	Informing the public the PCS program suspension because of poor outcomes	Outcry from the parents of the dead children
Feb 14	Media	Chief Medical Examiner	Suspension of PCS program	Contacted the parents of the dead children Contracted Dr. W. Duncan to review Cases
March 5	Chief Medical Examiner	Announcement	Called for an Inquest into the 12 deaths	Sinclair Inquest and subsequent Report